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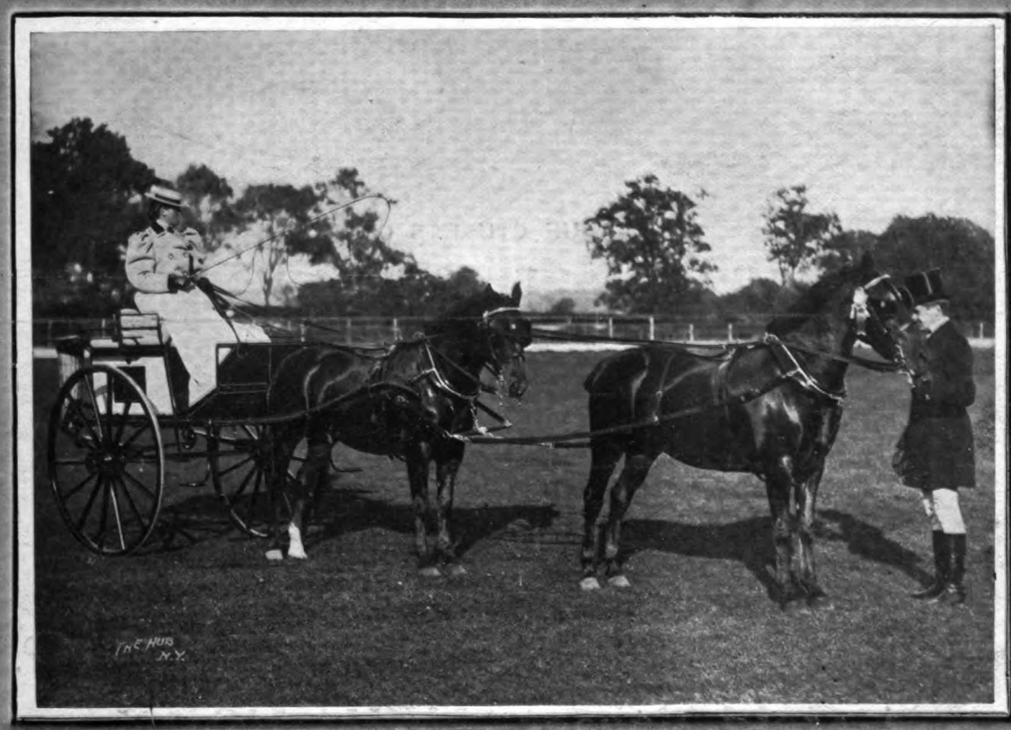
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The Hub

DEVOTED TO THE DOMESTIC AND FOREIGN INTERESTS OF CARRIAGE, WAGON AND AUTOMOBILE MANUFACTURERS AND DEALERS, AND THE ACCESSORY TRADES.



Vol. XLIII. AUGUST, 1901. No. 5.

TRADE NEWS PUBLISHING CO.

PUBLISHERS

24 & 26 MURRAY ST., NEW YORK

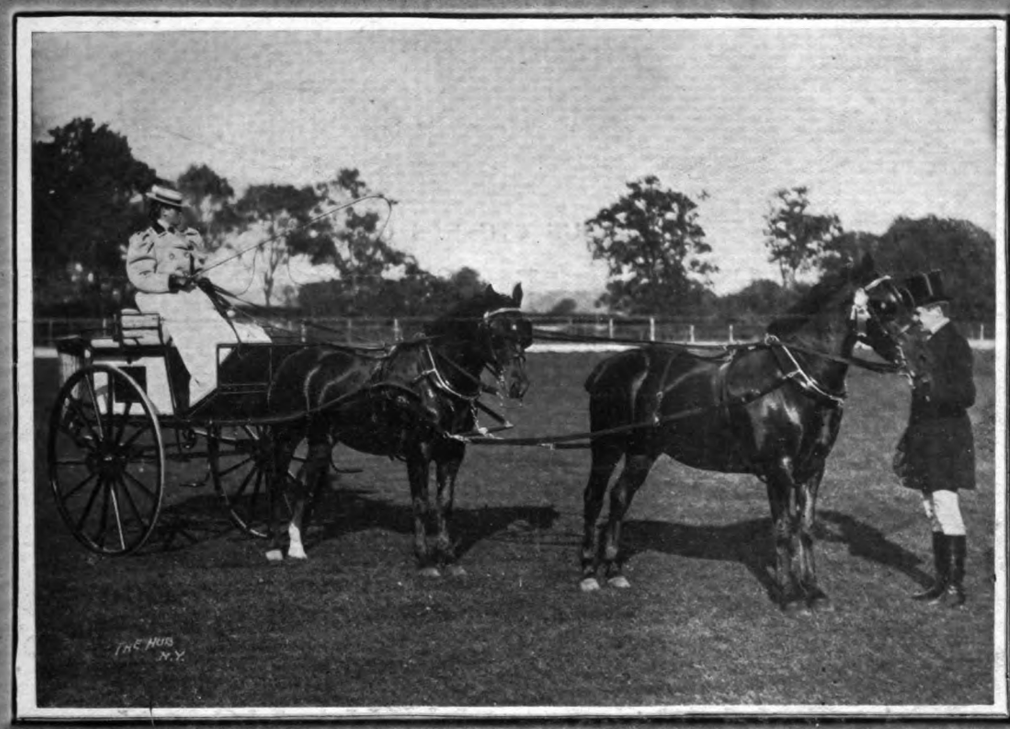
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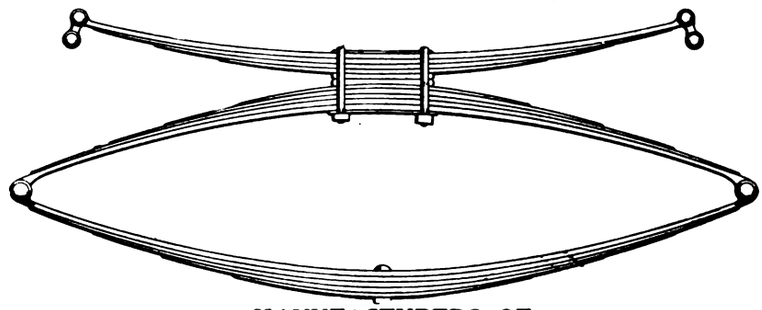
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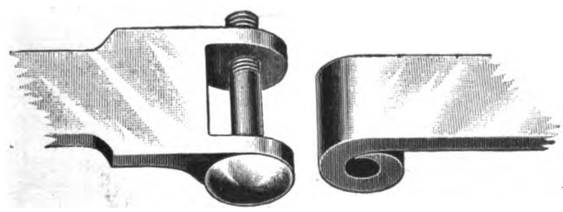
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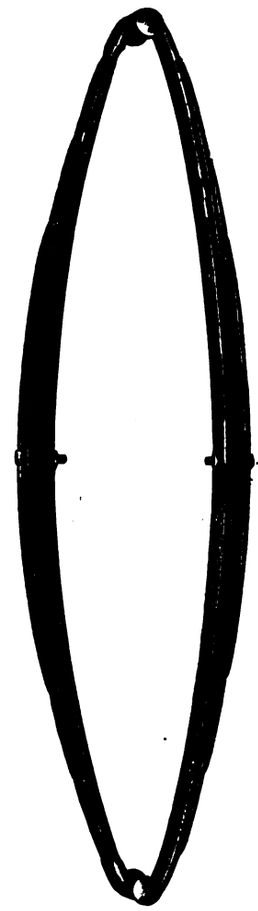
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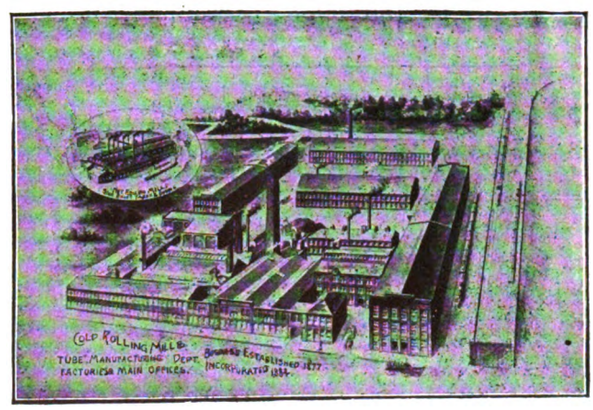
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We are completely installed
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HOT ROLLED ANNEALED AND PICKLED
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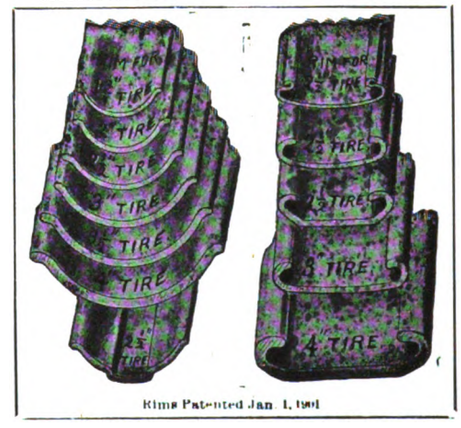
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HIGH CARBON
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Manufacturers find it unnecessary to finish further before enamelling or painting.



Rims Patented Jan. 1, 1901

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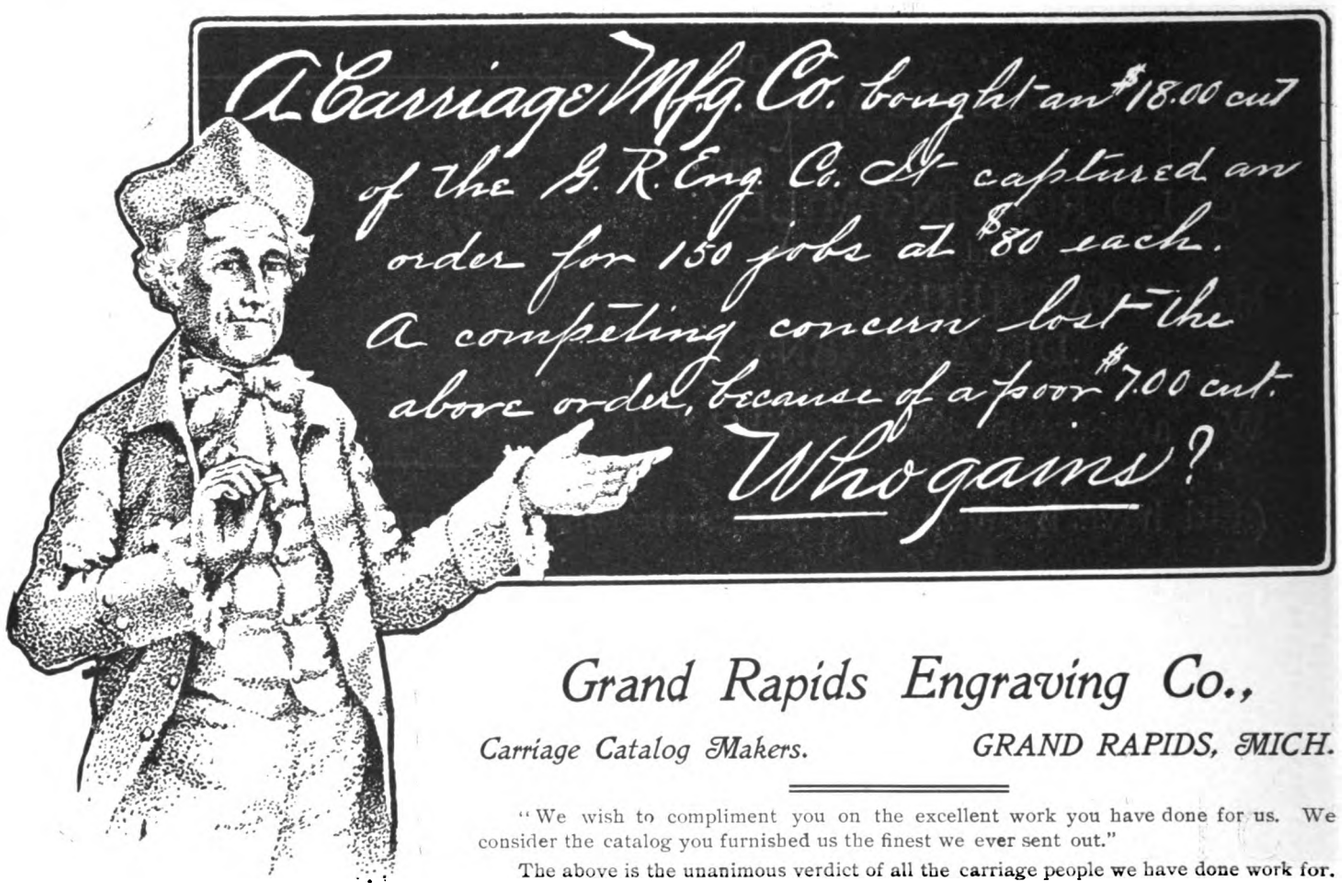
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"CLINCHER"
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We guarantee every transfer which we manufacture to be entirely satisfactory.

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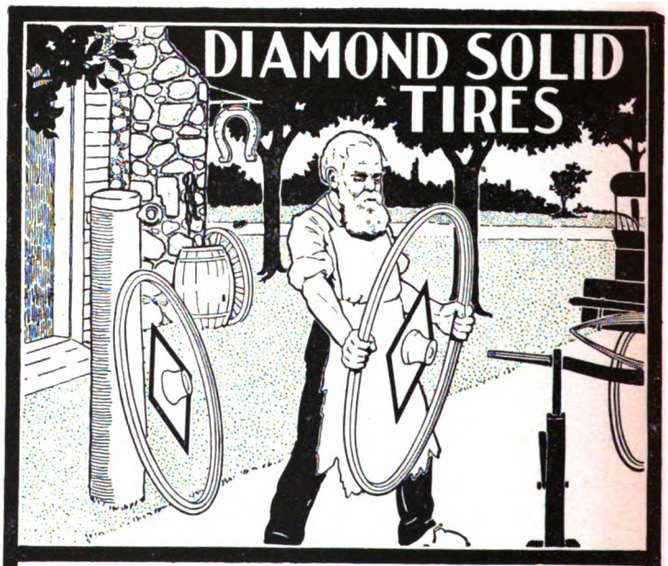


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Compare quality and price, if it favors us we are prepared to fill your orders. Will fit any standard channel.

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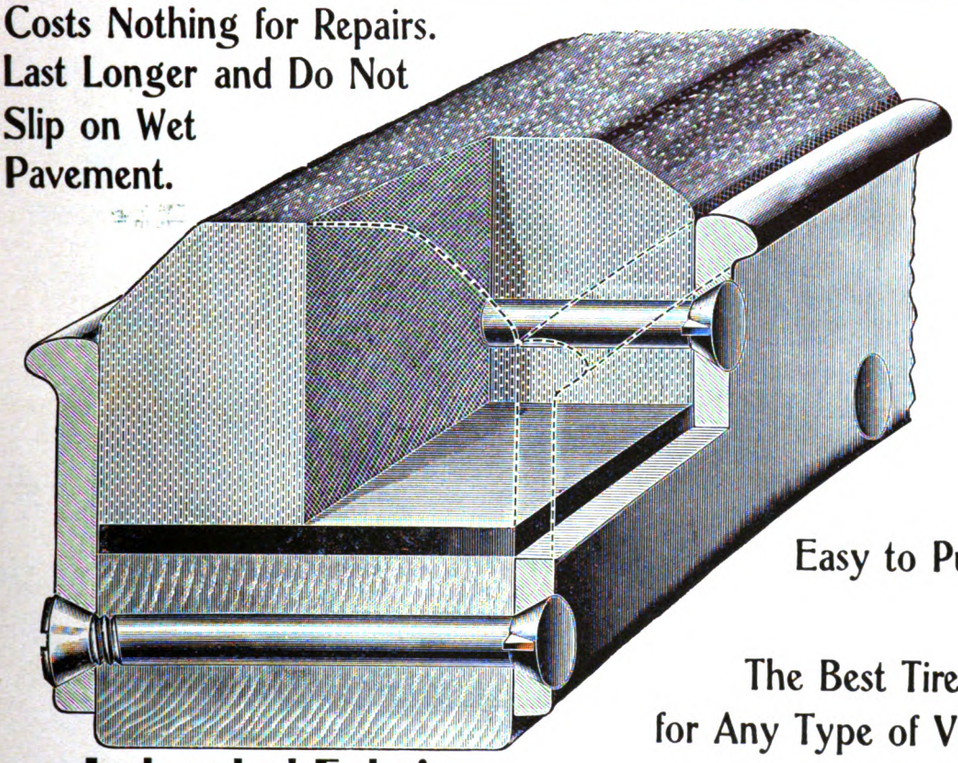
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Costs Nothing for Repairs.
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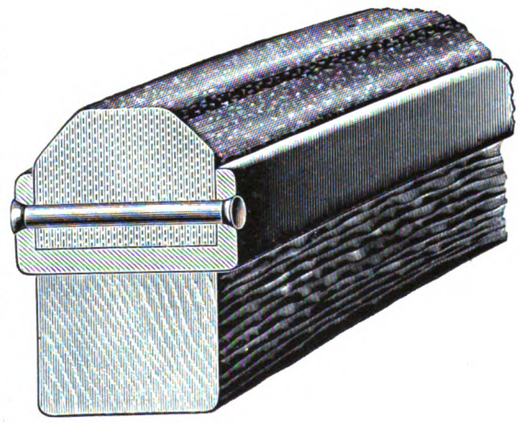
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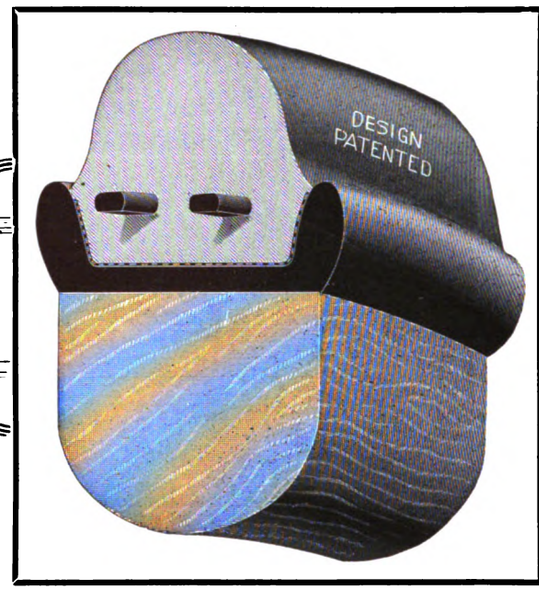


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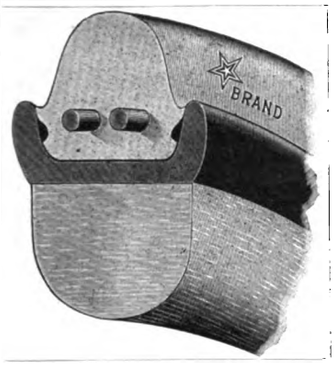
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Prices cannot be compared without comparison of quality.
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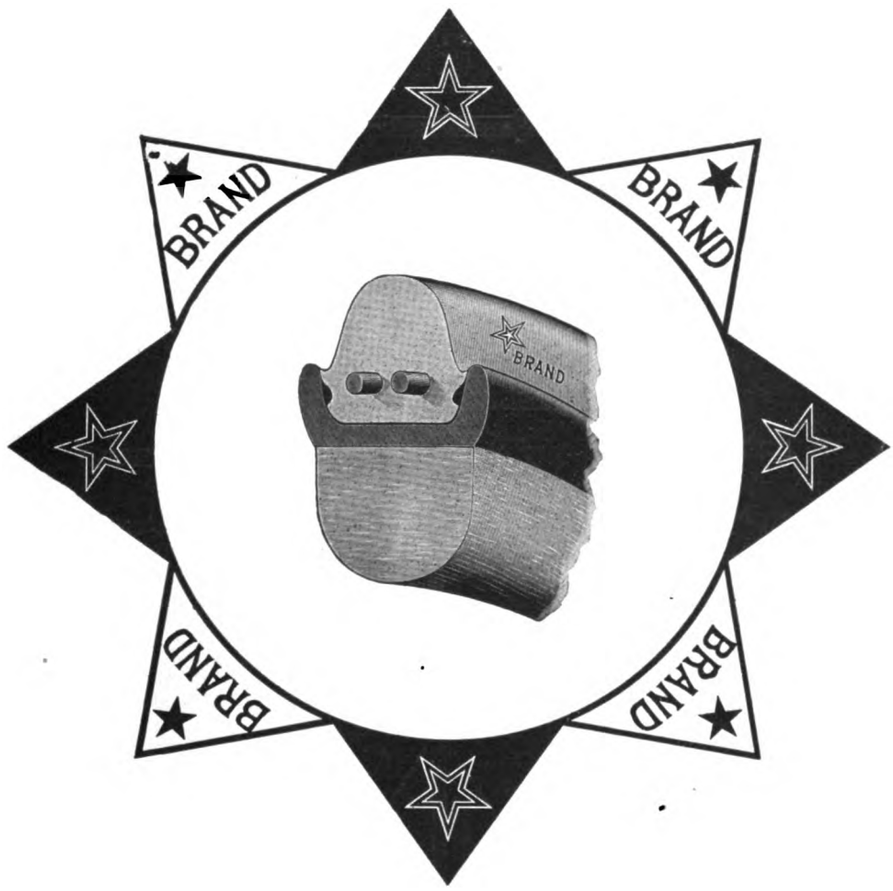
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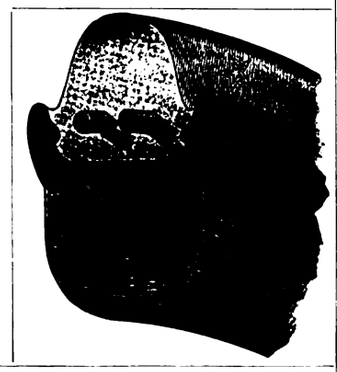


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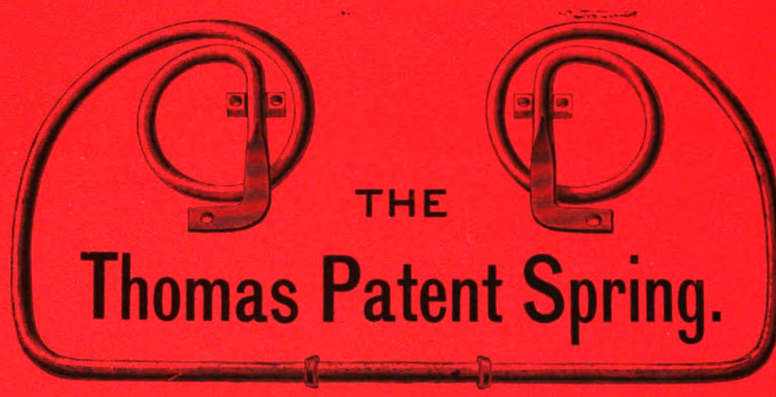
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No Special Body or Gear necessary

A set with all connections weighs fifteen pounds.

Saves thirty-five pounds on weight of Gear.

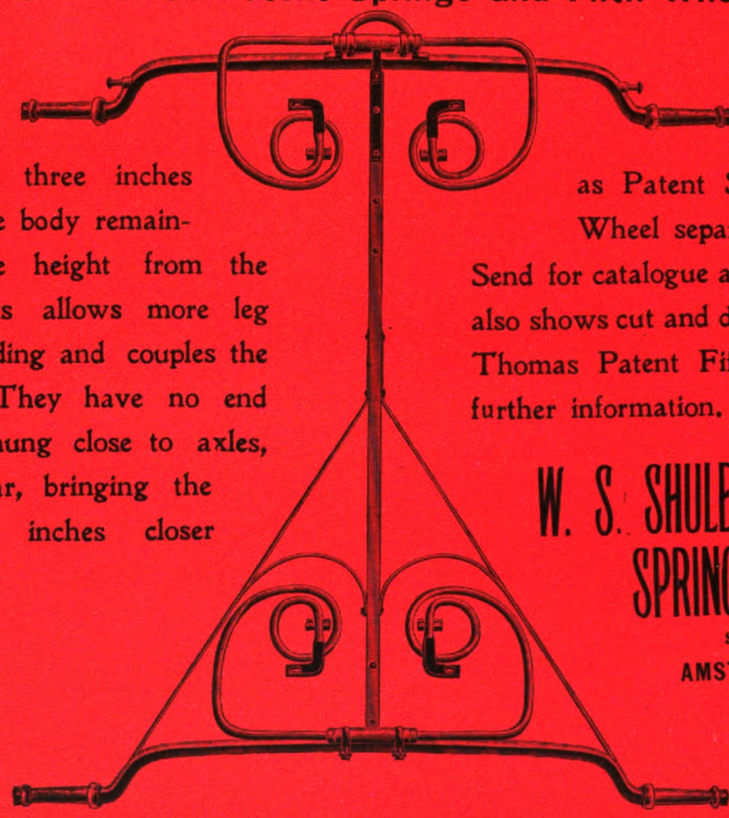
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Acts as an equalizer and keeps the body level, as it turns at center in an indestructible vulcanized fibre bearing.

Gives a Soft, Easy Motion. Is Noiseless, Stylish, Elastic and Non-Breakable

THE THOMAS BIKE GEAR

With Thomas Patent Springs and Fifth Wheel.



The Thomas Patent Spring allows the front axle to have three inches higher arch, the body remaining the same height from the ground. This allows more leg room for speeding and couples the horse close. They have no end pitch. Are hung close to axles, front and rear, bringing the wheels three inches closer together.

We furnish this Gear as shown. Also the Thomas Patent Springs or Fifth Wheel separate.

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Redding's Harness and Saddlery Directory

SEVENTH YEAR.

REDDING'S HARNESS AND SADDLERY DIRECTORY FOR 1901 contains some new and valuable features and is an up-to-date twentieth century publication. This directory has **always** been the **standard,** and every edition has been an advance in accuracy and usefulness over the preceding issue.

The 1901 edition has **a new arrangement** of the **wholesale** and **jobbing trade** that makes it very convenient for those who wish to separate *association jobbers* from those not at present so recognized.

A new part has been added that will be found a very serviceable list of **dealers in harness,** as distinguished from *retail harness* manufacturers. To many who solicit the vehicle, implement and hardware trade, as well as department stores, this will prove of great convenience. These trades are handling harness and horse goods in increasing volume yearly, and such a list is a distinct advantage to the trade.

The Buyer's Guide (Part III. of the Directory) has always been a valuable feature. This is an alphabetical classification of all the many and various articles made to sell to the trade from Axle Grease, under "A," down to and including Wool Saddle Linings under "W," and the names and addresses of those making the various articles.

As the export trade is now inviting attention, a list of exporters of saddlery is also published.

The body and the bulk of the Directory is, of course, made up of **the retail harness makers of the country.** They are conveniently arranged under State, Town and County, in the larger cities giving the street number of the occupant's place of business. Those whose rating (approximate) is over $1,000, are marked so as to be easily distinguished.

The 1901 edition is nearly exhausted, and those desiring copies should send $2.00 at once to

Trade News Publishing Company.

24-26 MURRAY STREET, NEW YORK.

Don't you mind if others say
That advertising doesn't pay.
Such people surely—there's the rub—
Have never patronized THE HUB.

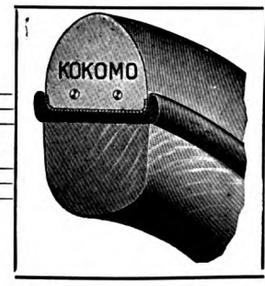
You are reading this ad. Why don't *you* buy this space, so others will read about *your* business?

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GOOD TIRES,

GOOD PRICES AND GOOD TREATMENT

ARE WHAT YOU

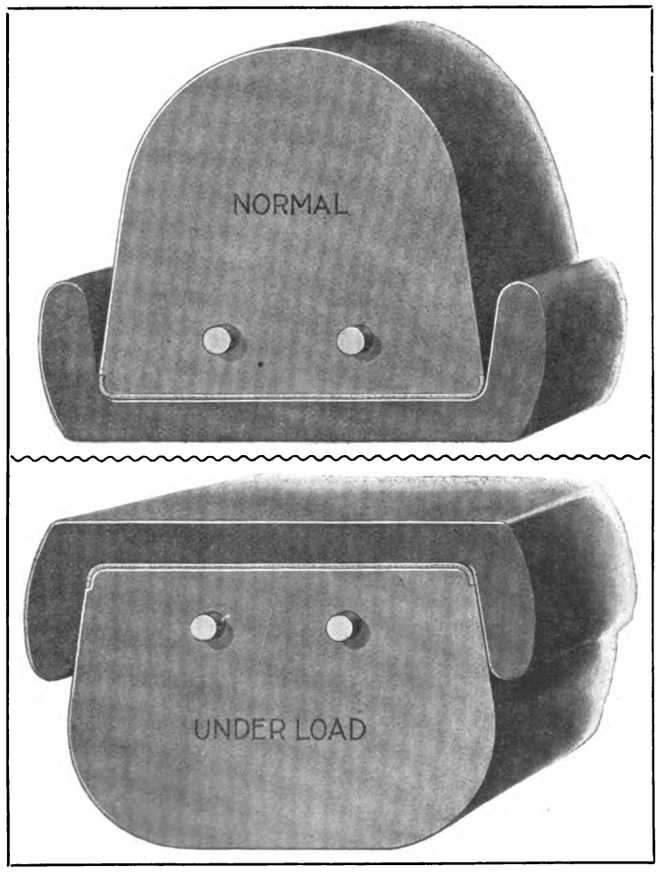


CAN GET FROM THE

Kokomo Rubber Co.

Kokomo, Indiana.

7 Arch St., Boston. 82 Broad St., New York City. 135 Lake St., Chicago. Portland, Oregon.



Carriage and... Automobile Trade

FURNISHED

RUBBER, CHANNELS, WIRE

AND TOOLS FOR APPLYING.

SIZES: 3-4 IN. to 3 IN.

This Tire Fits Into the Standard Channel.

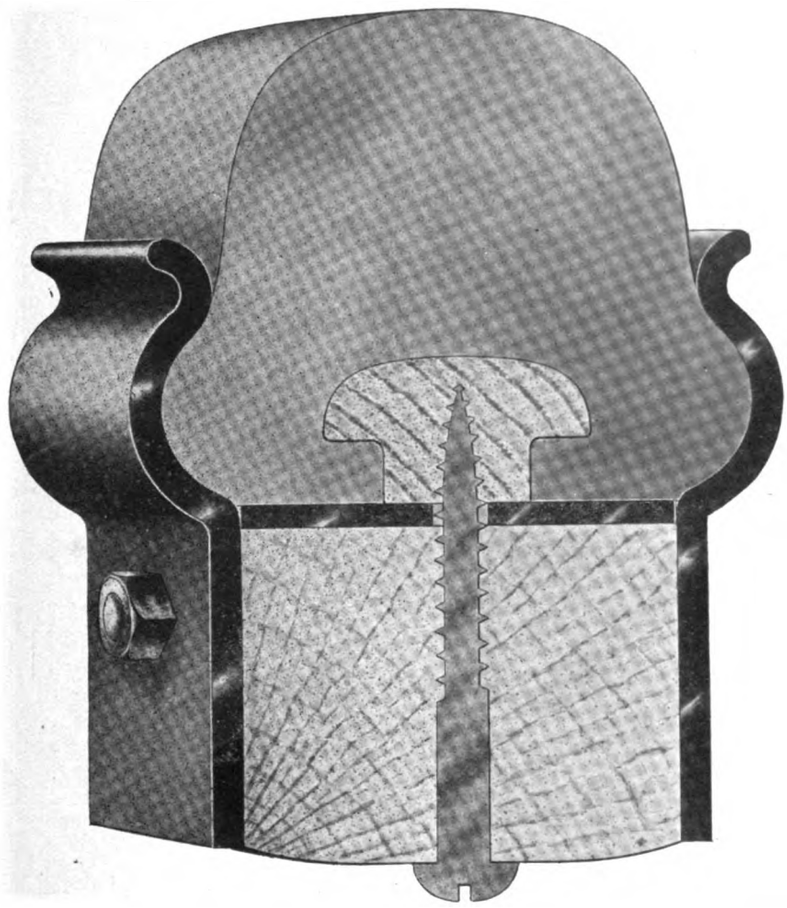
REVERE RUBBER CO.,

BOSTON. NEW YORK. CHICAGO.

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DEWES & WHITING

Double Locked Compressed Tire



Pat. Jan. 30, 1900.

The Dewes & Whiting Double Locked, Endless, Compressed Tire is put on to stay. By examining the cut you will readily grasp the principle and its obvious advantages. The internal lock cannot injure the rubber by corrosion, because it's hard wood. Simple, natural and efficient. No metal fastenings to corrode or destroy material. A long stride in the right direction.

FLANGE RINGS MANUFACTURED FOR THE TRADE.

DEWES & WHITING,

MANUFACTURERS,

243 CENTRE ST., N. Y. C.

Please mention "The Hub" when you write.

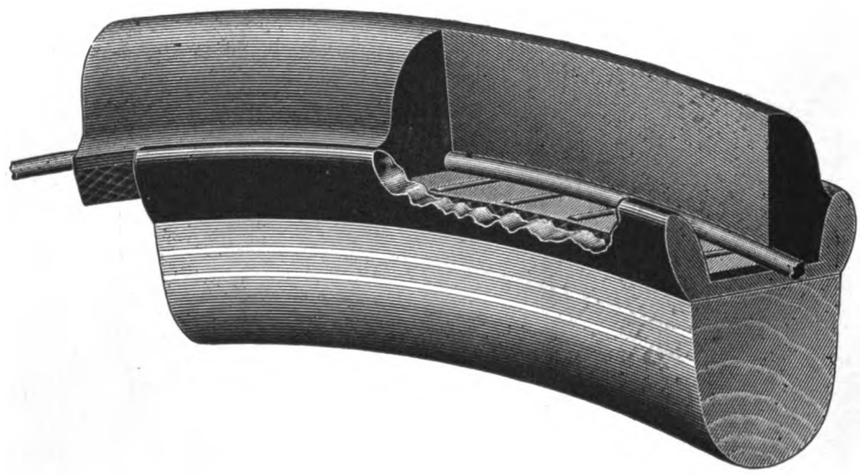
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"WEMAKA"

PERFECT VEHICLE TIRE

Perfection in Tire Construction.

Wise Buyers
Buy Cross Wire Tires!



CROSS WIRES are to a tire what a railroad tie is to the rail---a support.

NO EXPERIMENT---one year in service has convinced the user, manufacturer, our competitors and ourselves that it is all we claim for it.

Fifty years we have been compounders and vulcanizers of Rubber, which insures the buyer that our Rubber is right, and made to withstand wear.

N. J. CAR SPRING & RUBBER CO.,

JERSEY CITY, N. J.

Please mention "The Hub" when you write.

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The
New York Vehicle Tire
Is a long distance
Pneumatic Tire.
Use it and
Stop all worry.

New York Belting and Packing Company, Ltd.

25 Park Place, NEW YORK.

BRANCH STORES:

BOSTON: 24 Summer Street. **PHILADELPHIA:** 724 Chestnut Street. **ST. LOUIS:** 411 North 8d Street.
CHICAGO: 150 Lake Street. **INDIANAPOLIS:** 229 South Meriden Street.
BALTIMORE: 101 Hopkins Place. **SAN FRANCISCO** - 509 Market Street.

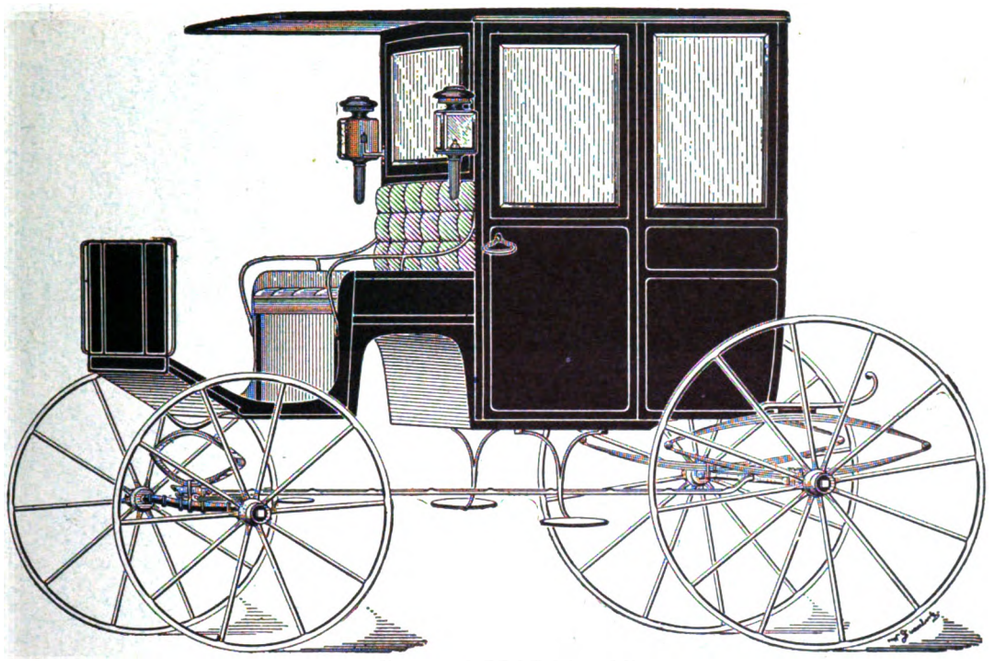
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MILLER BROS.,

HIGH GRADE VEHICLES
IN-THE-WHITE
FOR THE TRADE.

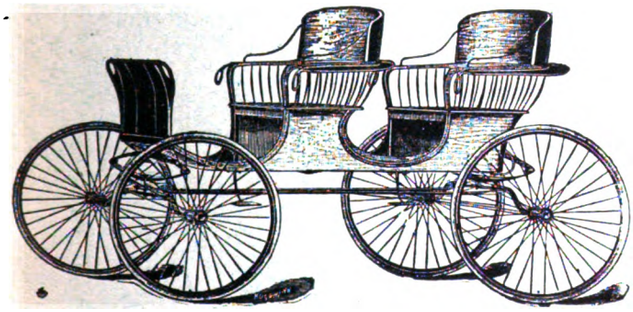


No. 121 DEPOT WAGON.

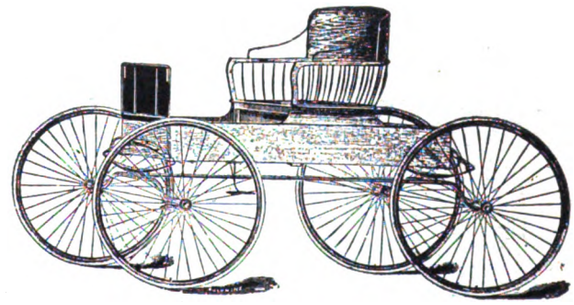
WRITE FOR CATALOGUE AND PRICE LIST.

AMESBURY, MASS.

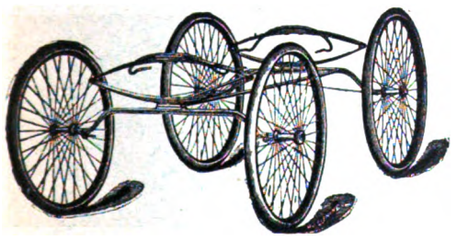
FITCH GEARS



FITCH PNEUMATIC SURREY (In-the-White,.



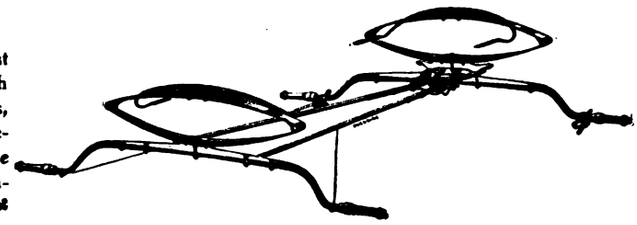
FITCH PNEUMATIC ROAD WAGON (In-the-White)



FITCH PNEUMATIC ROAD WAGON GEAR.

PRICES TO SUIT THE TIMES.

Send for our latest catalogue, with full line of gears, wagons in-the-white and carriage specialties illustrated.



FITCH IMPROVED BIKE AND PNEUMATIC GEAR.

We make Bike Gears and Wagons in-the-White, with Wood Hub Wheels and Solid Rubber Tires.

SHOWING ALL STYLES OF PNEUMATIC AND BIKE WORK.

FITCH GEAR CO., Rome, N. Y.

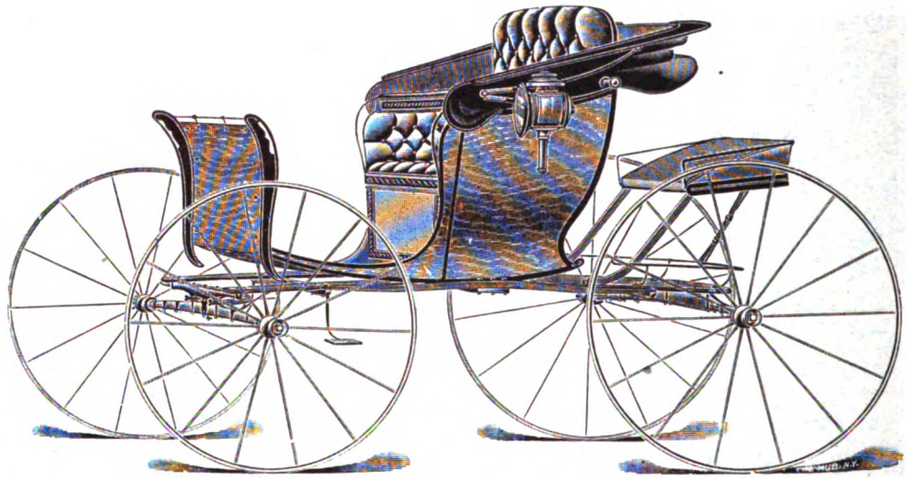
Please mention "The Hub" when you write.

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THE SUPERIORITY IN DESIGN,

CONSTRUCTION, FINISH AND EQUIPMENT OF OUR FOUR HUNDRED SERIES BUCKBOARDS HAVE MADE THEM THE STANDARD OF COMPARISON FOR OTHER BUILDERS OF VEHICLES IN THE BUCKBOARD LINE.

THE STATEMENT, "AS GOOD AS A WATERLOO," MEANS TO THOSE WHO ARE "VEHICLE WISE," THAT HIGHER PRAISE IS IMPOSSIBLE.



"Waterloo," No. 437, Colonial Spyder Curricle.

THE CARRIAGE DEALER WHO IS CATERING TO HIGH-CLASS TRADE WILL FIND THIS LINE A DESIRABLE ADDITION TO HIS STOCK, NOT ONLY IN THE CHARACTER IT WILL GIVE, BUT IN THE PROFITS IT WILL MAKE HIM.

CATALOGUE AND PRICE LIST MAILED TO DEALERS, IN TERRITORY NOT ALREADY ASSIGNED, ON REQUEST.

EARLY APPLICATION IS ADVISED.

THIS LINE OF BUCKBOARDS IS MEETING WITH MUCH FAVOR IN MANY OF THE PAN-AMERICAN COUNTRIES, AND WE QUOTE ATTRACTIVE PRICES, CAREFULLY BOXED, ON BOARD VESSEL AT ALL EXPORT POINTS.

WATERLOO WAGON COMPANY, Ltd.

WATERLOO, SENECA CO., N. Y.,

U. S. A.

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WAGON

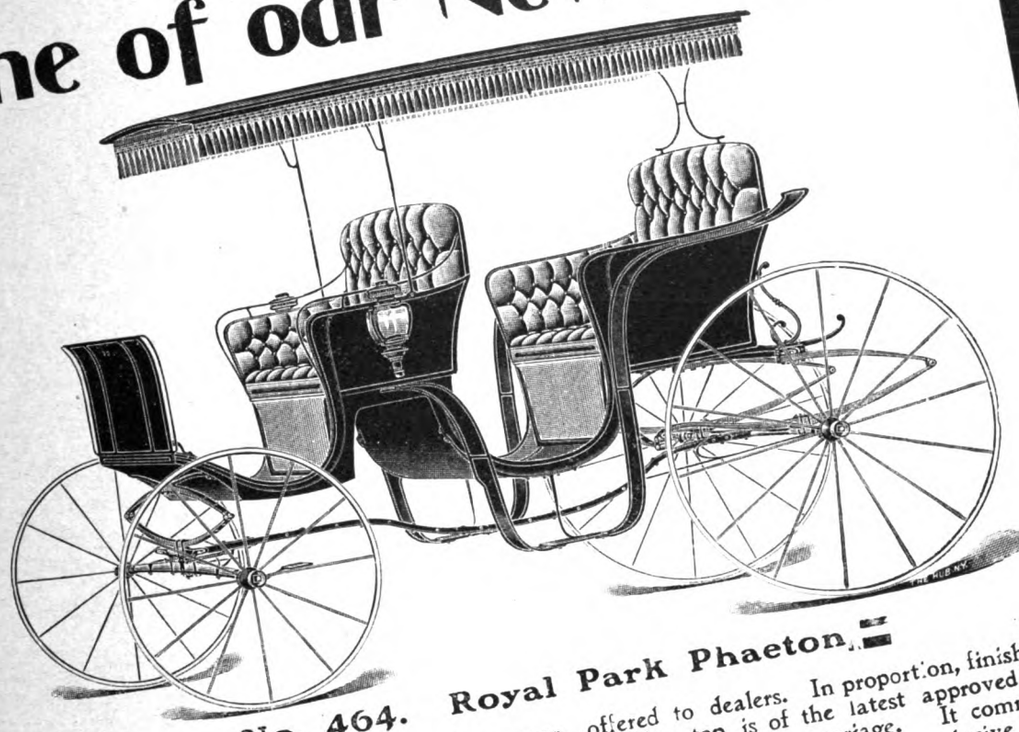
WATERLOO

COMPANY LTD.,

One of our New Styles

LATE STYLES

FINE FINISH



No. 464. Royal Park Phaeton.

We show above one of the best values ever offered to dealers. In proportion, finish and equipment it is absolutely correct in every detail. The top is of the latest approved construction and is easily removable, making a very handsome open carriage. It commands the immediate and favorable attention of the buyer who is looking for an exclusive high-grade vehicle at the right price. *Vehicle Dealers in the Pan-American countries will receive our Special Export Price Sheet free by mentioning "The Hub" when they write.*

Unusual care is given to boxing for ocean shipment to economize space and secure safe arrival.
Prices are quoted on board vessel at export points in our price sheet.

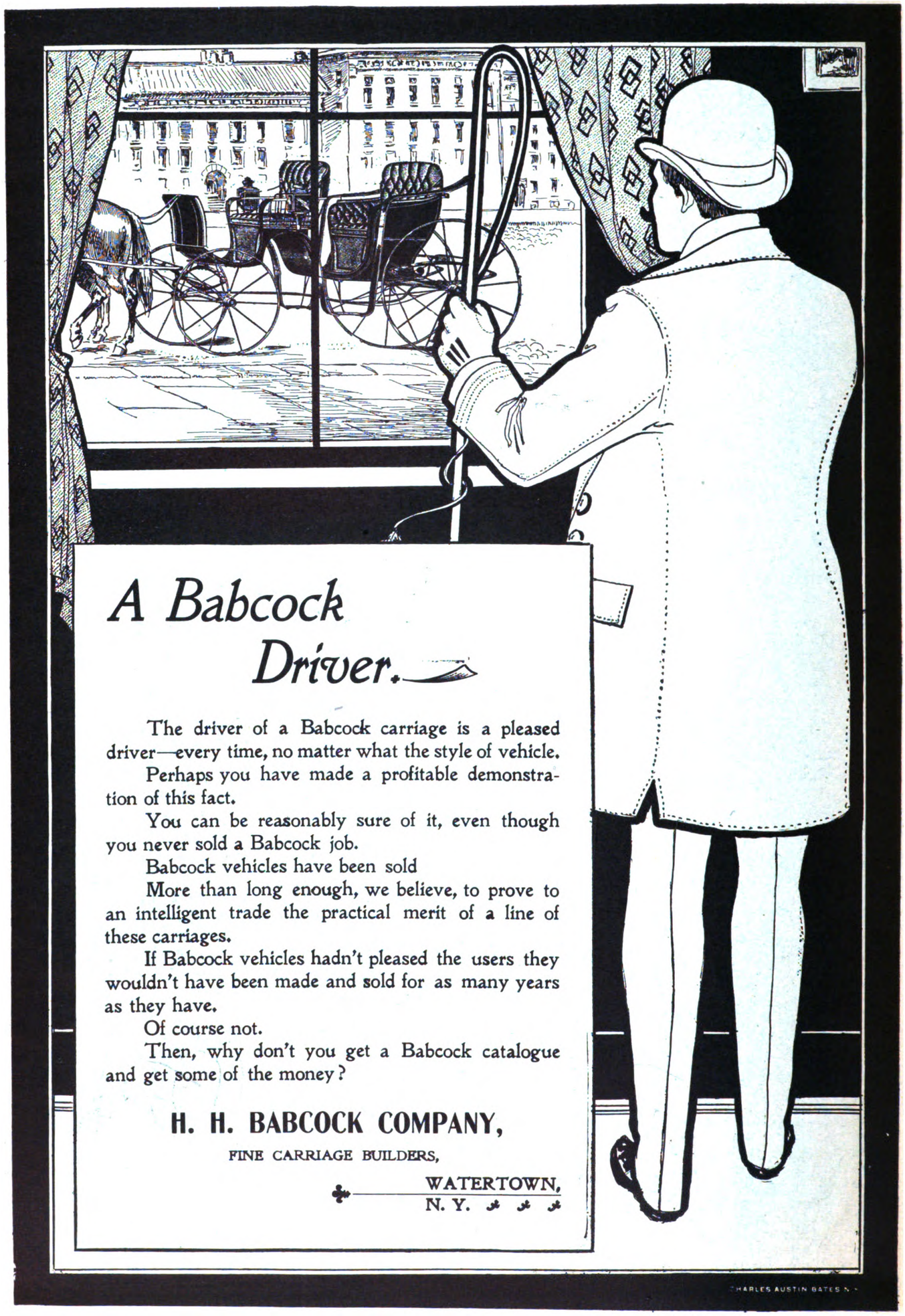
NEW CATALOGUE AND REVISED PRICE LIST FREE

SENECA CO.

WATERLOO

N.Y.

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A Babcock Driver.

The driver of a Babcock carriage is a pleased driver—every time, no matter what the style of vehicle.

Perhaps you have made a profitable demonstration of this fact.

You can be reasonably sure of it, even though you never sold a Babcock job.

Babcock vehicles have been sold

More than long enough, we believe, to prove to an intelligent trade the practical merit of a line of these carriages.

If Babcock vehicles hadn't pleased the users they wouldn't have been made and sold for as many years as they have.

Of course not.

Then, why don't you get a Babcock catalogue and get some of the money?

H. H. BABCOCK COMPANY,

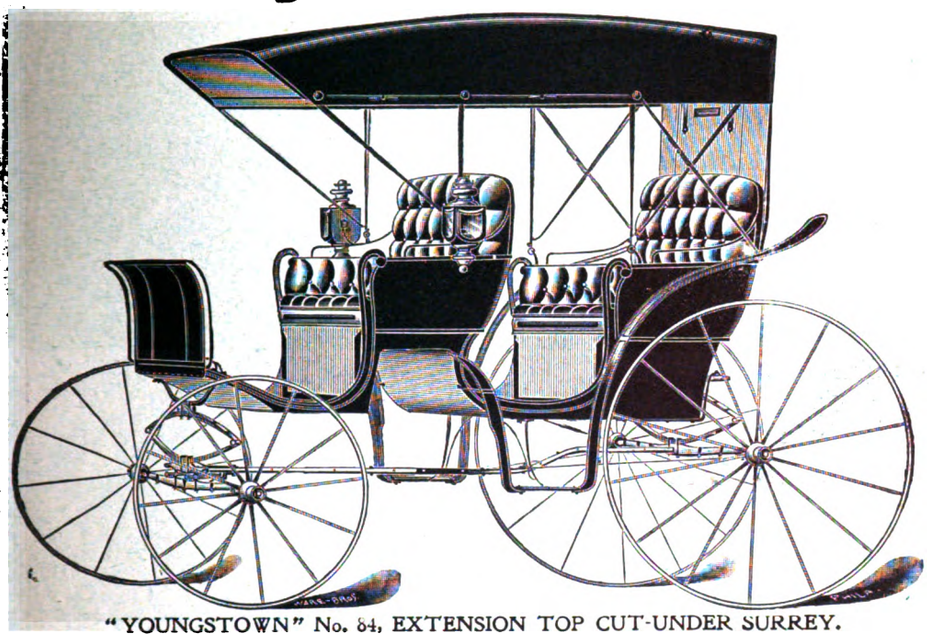
FINE CARRIAGE BUILDERS,

WATERTOWN,
N. Y.

CHARLES AUSTIN BATES N.Y.

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"Youngstown" Dealers' Delight.



"YOUNGSTOWN" No. 84, EXTENSION TOP CUT-UNDER SURREY.

No. 84 "Youngstown" not only pleases every individual buyer, but its popularity has become so universal that in many sections it has been styled the "Dealers' Delight."

It is strictly high grade in every detail. Description appears on pages 6 and 7 of our catalogue.

The top is best brand hand buffed leather; leather curtains and leather covered bow sockets.

We would be pleased to quote price and send catalogue to dealers.

MANUFACTURED BY

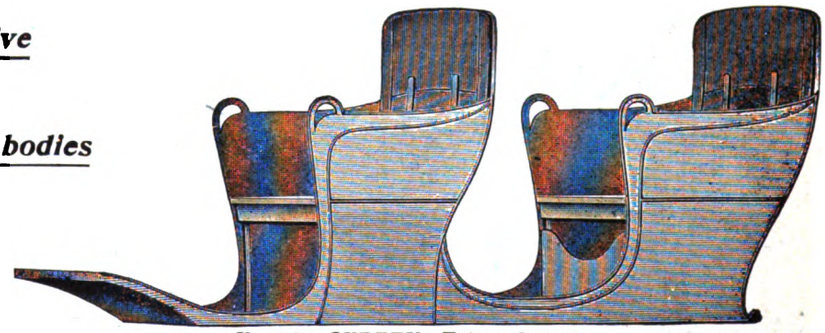
THE YOUNGSTOWN CARRIAGE & WAGON CO., YOUNGSTOWN, OHIO.

BODIES! BODIES! BODIES!

Many new and attractive designs for 1900.

A choice lot of stylish bodies always in stock.

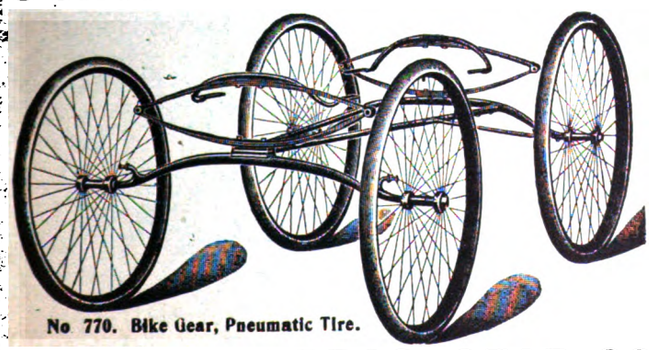
REQUEST WILL BRING CATALOGUE AND PRICES.



No. 153. SURREY. Price, $10.00.

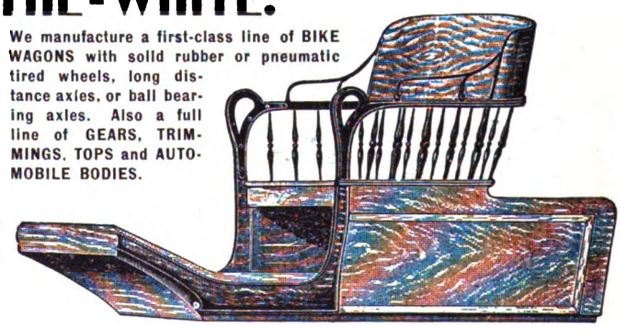
CINCINNATI PANEL CO., Cincinnati, Ohio.

SCHUBERT'S WAGONS IN-THE-WHITE.



No 770. Bike Gear, Pneumatic Tire.

We manufacture a first-class line of BIKE WAGONS with solid rubber or pneumatic tired wheels, long distance axles, or ball bearing axles. Also a full line of GEARS, TRIMMINGS, TOPS and AUTOMOBILE BODIES.



AUTOMOBILE BODY.

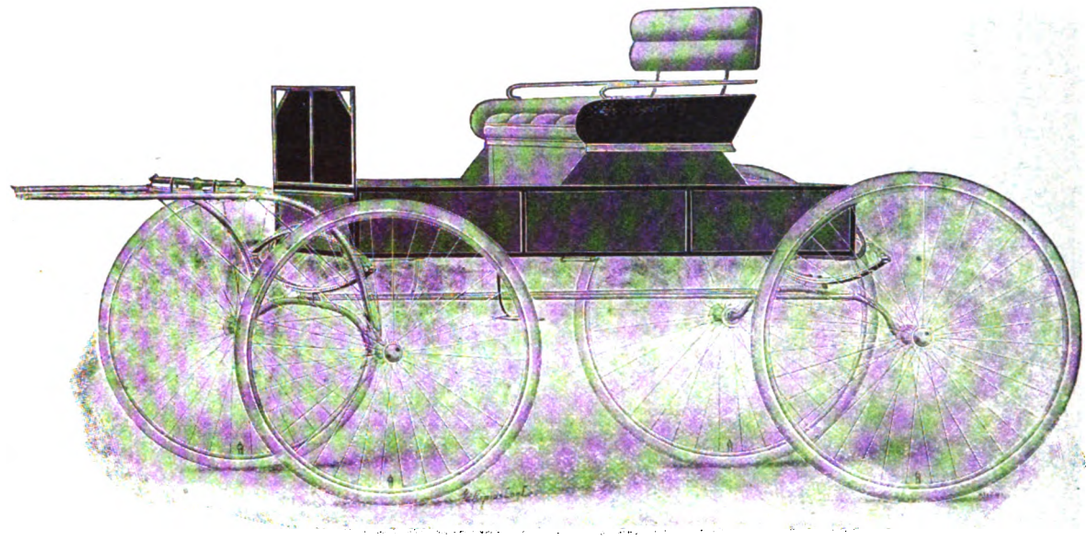
SCHUBERT BROS. GEAR COMPANY, ONEIDA, N. Y., U. S. A.

Please mention "The Hub" when you write.

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No. 133 RUBINSTEIN.

The Latest Idea In a Pneumatic Wagon, Embracing The New Style Beverly Body and Seat.



No. 133 Rubinstein Wagon.

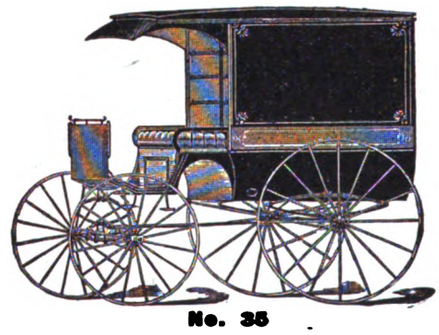
No. 133 represents the latest idea in a pneumatic wagon, embracing the new style Beverly body and seat. In the manufacture of this wagon we have given attention to the smallest details, not only in the selection of material of the very best quality, but in the rounding out and finishing; making in the end the truly finished piece of work.
This wagon is of the proper proportion and without fault or blemish.

WRITE AND GET FULL DESCRIPTION.

THE RICHLAND VEHICLE CO., Mansfield, Ohio, U. S. A.

Best in the Market

We build Honest Wagons at Honest Prices.

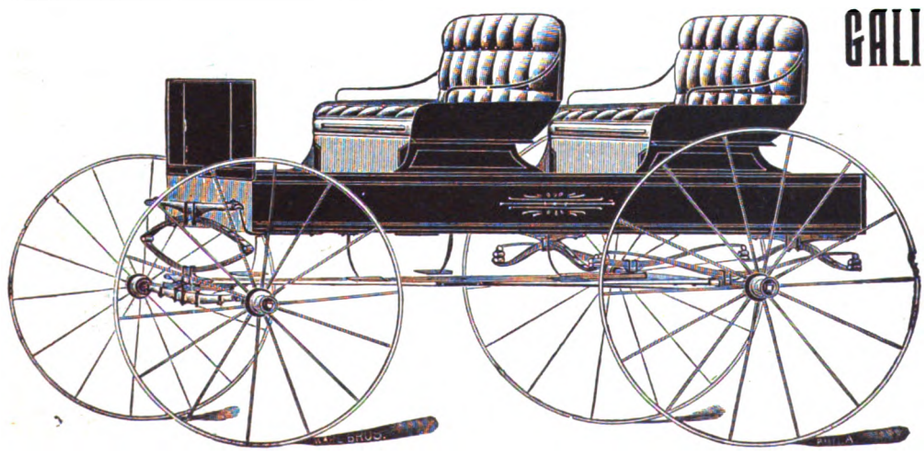


No. 35

The Quality of our work is Guaranteed.

....WRITE FOR OUR ILLUSTRATED FORM N. CATALOGUE AND PRICE LIST.....

THE O. ARMLEDER CO. Cincinnati, Ohio.



GALION WAGON & GEAR CO.

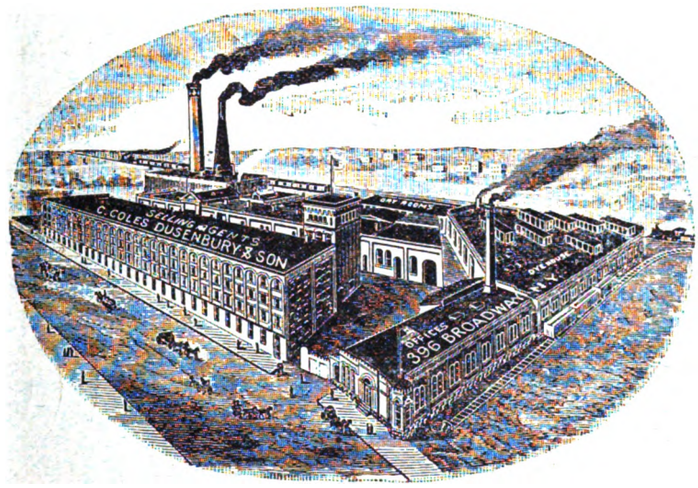
GALION, O.

MOST COMPLETE WAGON AND GEAR FACTORY ON EARTH.

DID YOU SEE OUR LINE AT CINCINNATI?

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WHIPCORD



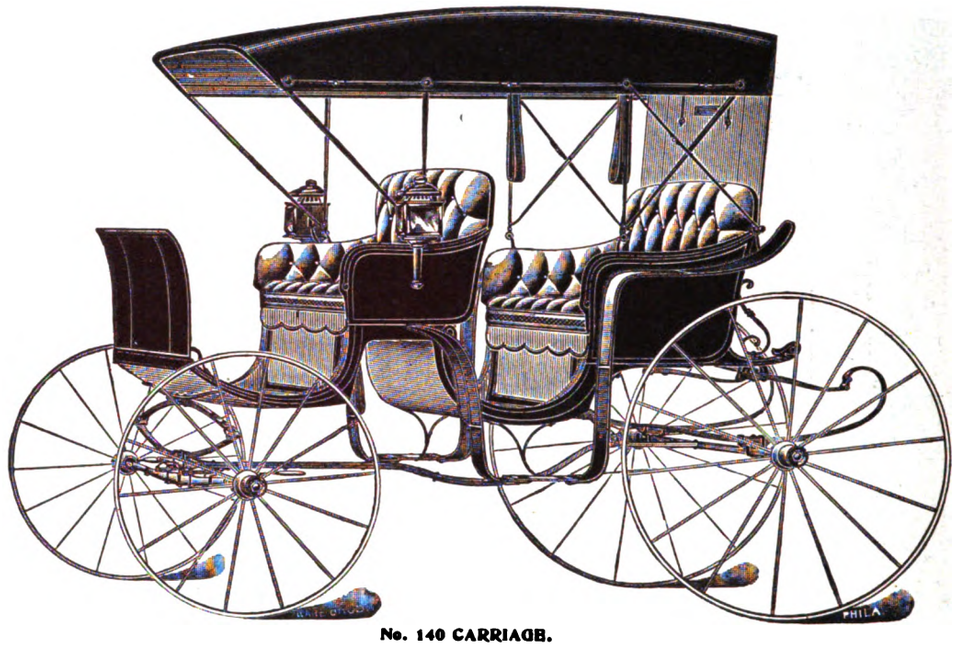
BUY OF THE MILLS

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BLEES-McVICKER CARRIAGE CO.,

Manufacturers of **FINE VEHICLES.**

STYLE, QUALITY, WORKMANSHIP.



No. 140 CARRIAGE.

It Will Pay You to Investigate

WRITE FOR CATALOGUE.

MACON, MISSOURI.

Our Way — Others' Way

RETAIL DEALER MILL 1 PROFIT. PAYS ONLY ONE PROFIT.

SHORT - CUT

MILL TO RETAIL

RETAIL DEALER JOBBERS EASTERN COMMISSION HOUSES MILL 1 PROFIT. 2ND PROFIT. 3RD PROFIT. PAYS 3 PROFITS.

Wool Square Horse Blankets

FROM MILL DIRECT TO RETAILER.



Wool Carriage Robes

Profitable Line
"Easy to sell as Nails."

NORTHERN OHIO BLANKET MILLS

THE BECKMAN CO.
CLEVELAND, OHIO

SELLING AGENCIES

CHAS. G. JOHNSTON, 281 Madison, Chicago
F. M. LETTS, 31 North Sixth, Philadelphia.
E. L. BOWLES, 72 Warren, New York.
McINTIRE & CHANDLER, 97 Portland, Boston.

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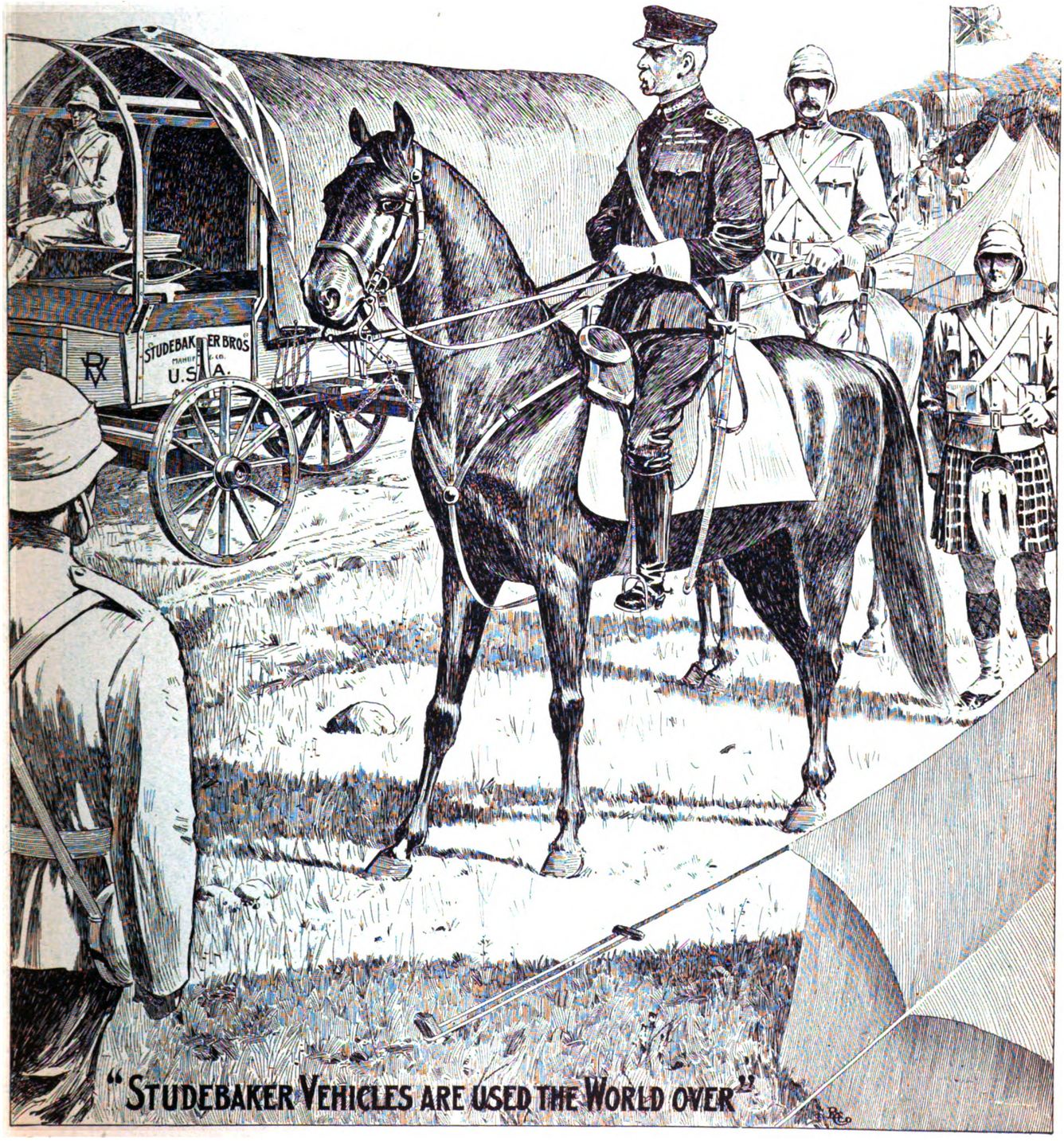
STUDEBAKER WAGON

Gains Highly Favorable Mention in Lord Roberts' Official Report.

Under date of April 2, 1901, Lord Roberts, in his official report of the progress of the war in South Africa, said :

"Wagons were imported for trial from the United States, and these proved to be superior to any other make of either Cape or English manufacture. The wheels were of hickory and the metal work of steel. They were built by Messrs. Studebaker Bros. Manufacturing Company, who have a great wagon manufactory at South Bend, Ind. The superiority of these vehicles was doubtless due to the fact that such wagons are largely used in America for the carriage of goods as well as for military transport. The manufacturers have, therefore, learned by practical experience what is the best type of wagon, and what are the most suitable materials to employ in building it. It may be added that the wagons in question cost considerably less than the Bristol pattern wagon."

This report was published in the Gazette and the Times, of London, and then became common property.

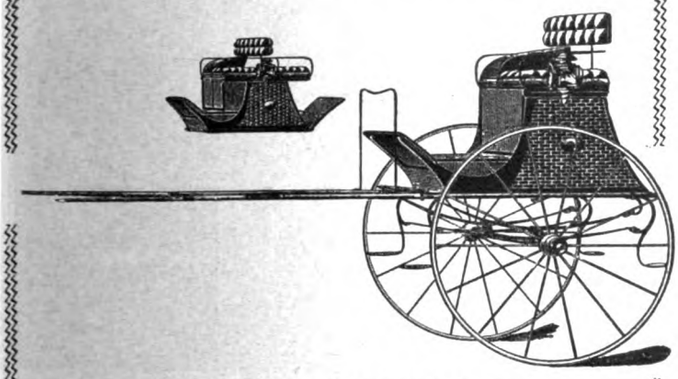


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Combination Cart.



CARRIES TWO AND FOUR
WITH PERFECT BALANCE.

CHAS. L. SCHWARZ,

Manufacturer of the Famous

HACKNEY CART.

317 and 319 North Broad Street.

PHILADELPHIA, PA.

ANNOUNCEMENT
PREPARED TO FILL
ORDERS PROMPTLY

Dash and Seat Rails,
Body and Panel Back Rails,
Silver Plated Shaft Tips,
Etc.

ENTERPRISE BRASS
AND
PLATING WORKS
CINCINNATI, O.
M. C. WEIGLEIN PROP.

WRITE FOR CATALOGUE

Bailey Spring Plans

We shall soon make an announcement regarding our spring and the trade that will be interesting from a mechanical and commercial standpoint.

IT WILL BE QUITE WORTH
YOUR WHILE TO WATCH FOR IT

S. R. BAILEY & CO.
AMESBURY, MASSACHUSETTS

BULL-DOG
SHAFT SHACKLES

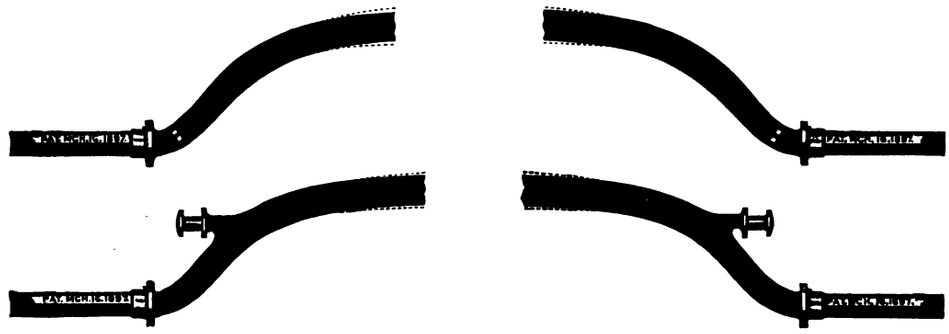
are most satisfactory both to him who sells and to him who buys

S. R. BAILEY & CO., Amesbury, Mass.

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PREMIER

AXLE PATENTS.



WE hold Patents on Axle Forgings with Shaft and Brace lug design, as shown in cut above (also three other designs), and have licensed the parties named below to make and sell them. Infringers will be prosecuted.

LICENSEES:

The Sheldon Axle Co., Wilkesbarre, Pa.

The Wilcox Mfg. Co., Mechanicsburg, Pa.

The Billings & Spencer Co., Hartford, Conn.

The Premier Mfg. Co., Hartford, Conn.

Premier Mfg. Company,

HARTFORD, CONN.

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1902.

FOR the Season of 1901 and 1902 we will have a larger line than ever, in the way of

Wire Wheels,
Ball Bearing Axles,
Bushings (for Wood Wheels),
Gears,
Forging Axles, etc.,

and trust we may have an opportunity of submitting samples and prices before you close contract for your season's requirements in our line. We go after business anywhere and at any time.

Premier Mfg. Company,

HARTFORD, CONN.

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Samples of our Electrotypes

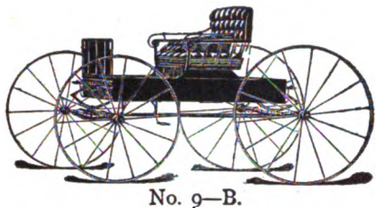
FOR ADVERTISING PURPOSES.

FINE CUTS

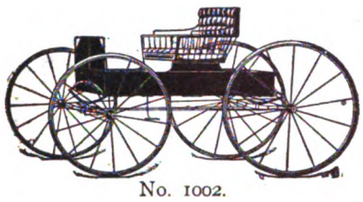
....AND....

Catalogue Work

OUR SPECIALTIES.



No. 9—B.



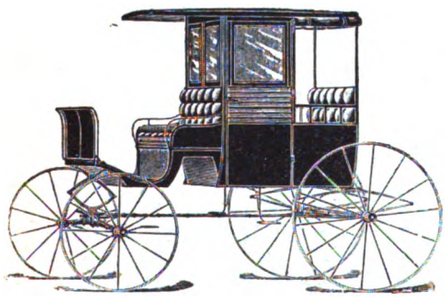
No. 1002.



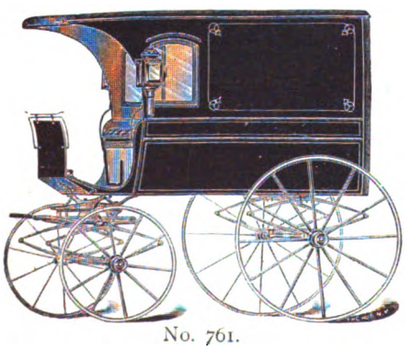
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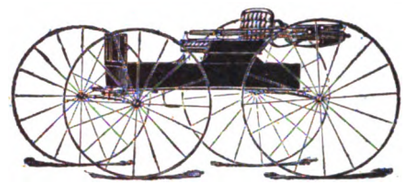
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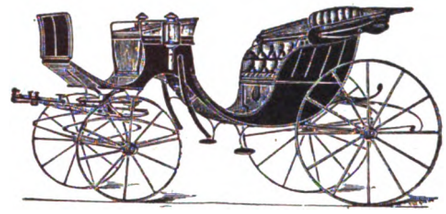
No. 14—B.



No. 761.



No. 2—B.



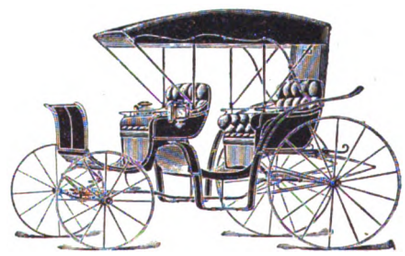
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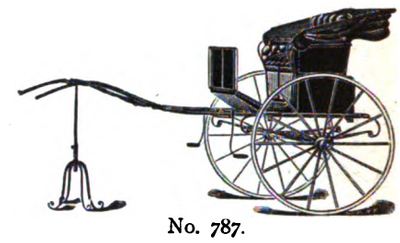
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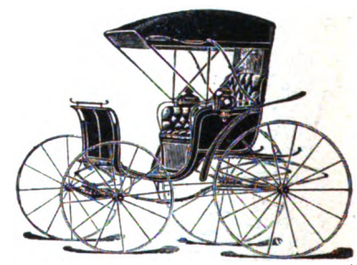
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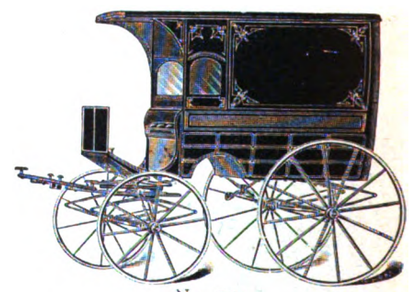
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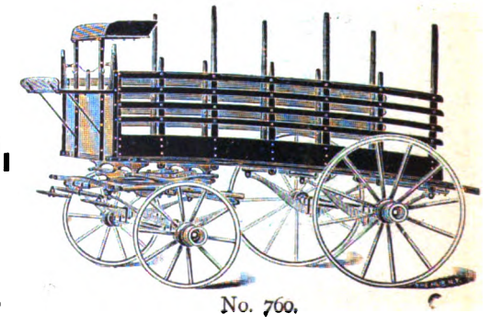
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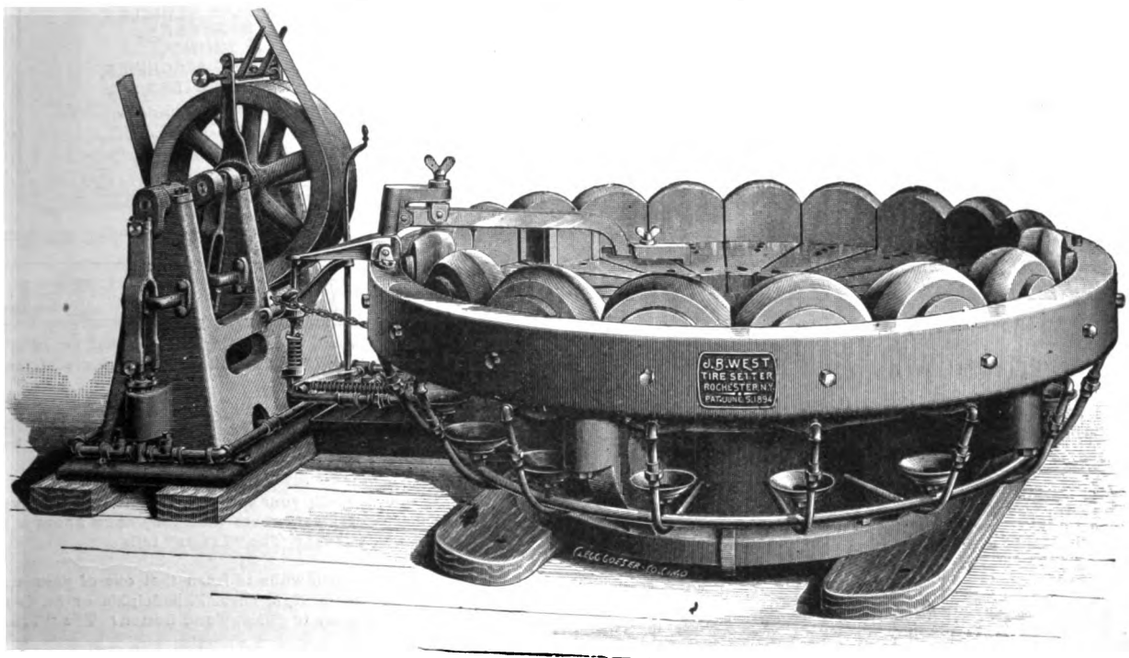
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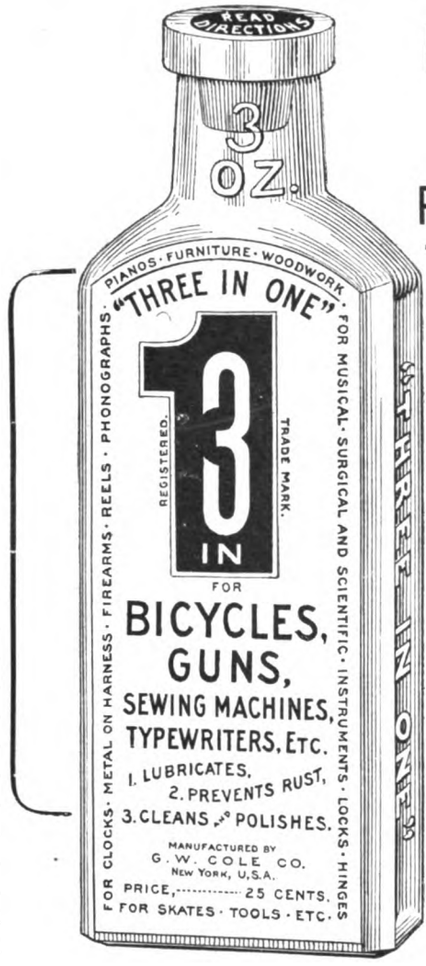
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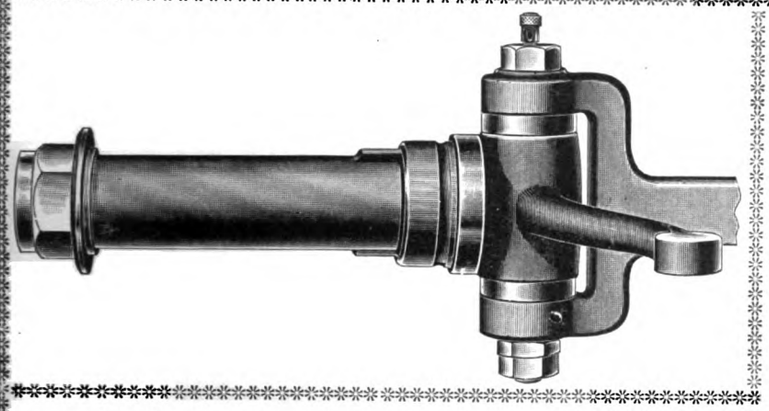
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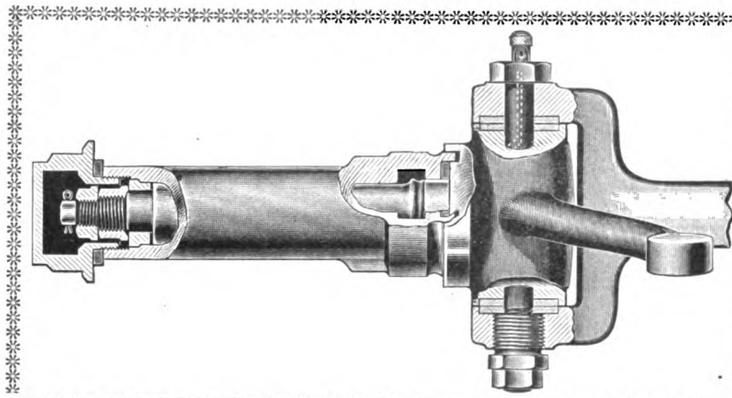
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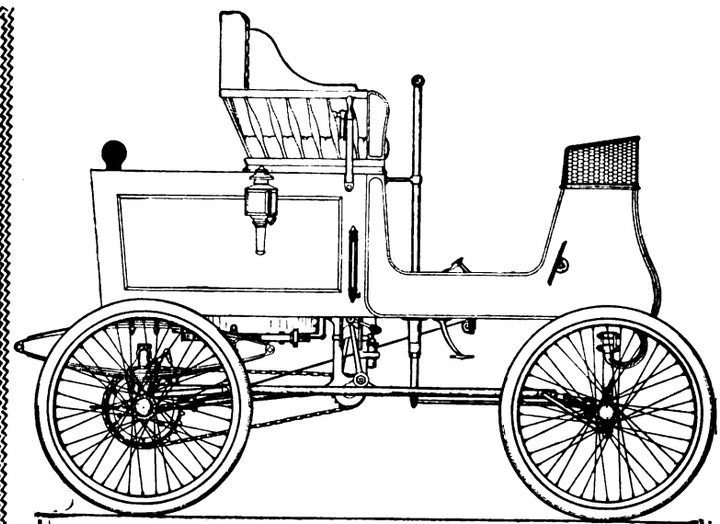
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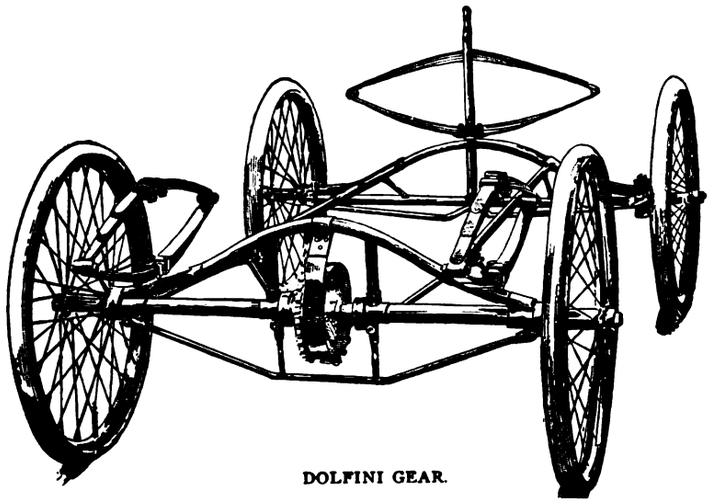
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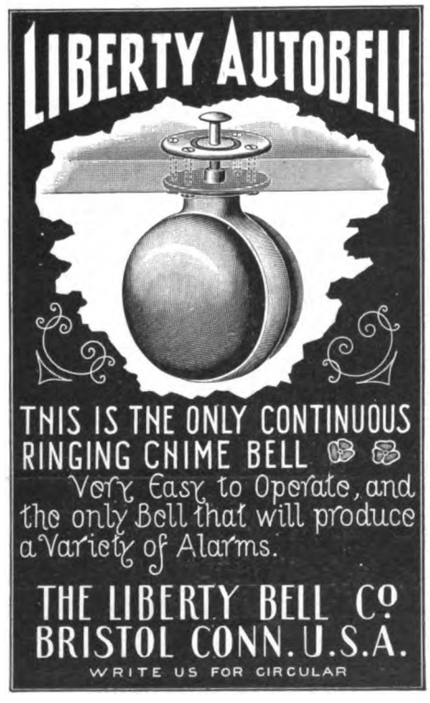
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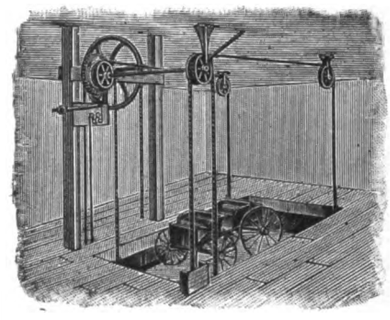
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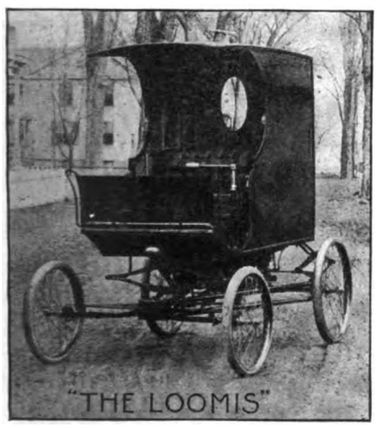
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Will track ordinary County roads. Gasoline tank holds 10 gallons, sufficient for 100 miles of travel, 12 to 18 mile speed.

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NO MACHINERY IN THE BODY WHATEVER.

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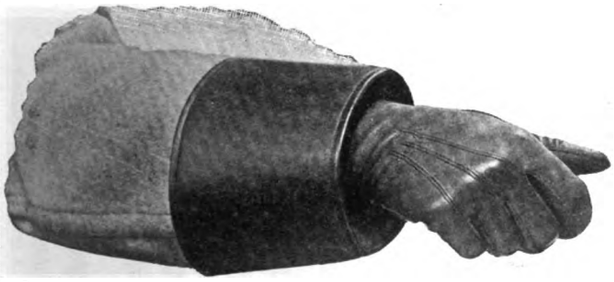
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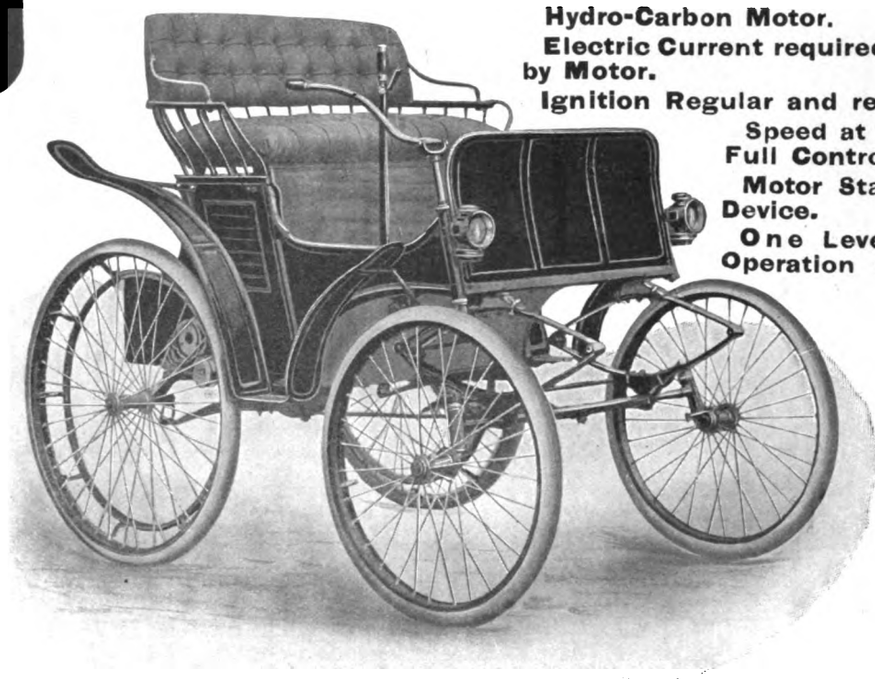
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Hydro-Carbon Motor.
Electric Current required for Ignition provided by Motor.
Ignition Regular and reliable.
Speed at Will of Operator and under Full Control.
Motor Started from Seat by Simple Device.
One Lever Controls every Required Operation except Steering.
Cost of Operating Less than One-Quarter Cent per Mile.
Free from Odor.
Practically Noiseless.
Very Attractive.
Simple in Construction and Durable.
Weight 475 Pounds.

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Cut Bevel, Mitre, Spur and Internal Gears and Pinions for all classes of Automobile work. We are thoroughly equipped for this style of gearing and can satisfy you in the way of prices and deliveries. Will quote from Blue Prints, Sketches or Specifications.

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FACTORY OF THE MOBILE COMPANY OF AMERICA.—VIEW LOOKING SOUTH.

THE "MOBILE" A CARRIAGE FOR EVERY-DAY USE.

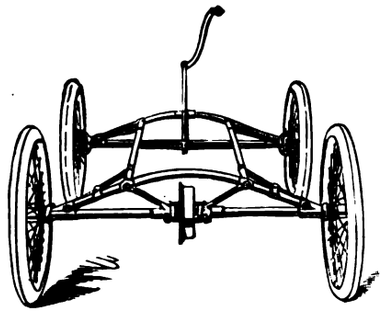
ON June 10th, four "Mobiles" started in the middle of the afternoon from the factory of The Mobile Company of America at Kingsland-Point-on-the-Hudson and ran to West Point, reaching the ferry at Garrisons in time for the 5:15 boat. Two hours and a half were spent in running about the Military Academy roads, then, after dinner, the four carriages started home by moonlight. The road from Kingsland Point to West Point is hilly, with many steep gradients scattered over its length; but from the State Camp at Peekskill through the Highlands of the Hudson to West Point occur long climbs and very steep and rough roads. The distance traveled was approximately, including the running at the Academy grounds, sixty-five miles. Not a delay or accident of any kind occurred; not a moment's worry to anyone of the eight people who made the journey. The "Mobiles" were in as good condition at the end as at the start—not one, but the entire four—and one of them had come up from New York to Kingsland Point before starting for West Point.

This gives an idea of what the "Mobile" is—a splendid piece of machinery, satisfactory in all its parts, of the best quality and workmanship throughout. Price, $750. All visitors can inspect every department of the manufacture of "Mobiles." Twenty-five trains stop at Philipse Manor, the station on the company's grounds.

For information regarding "Mobiles" address

THE "MOBILE" COMPANY OF AMERICA,
PHILIPSE MANOR STATION, TARRYTOWN-ON-THE HUDSON, N. Y

Automobile Running Gears.



We make a specialty of gears suitable for Gas, Steam or Electric power. Our gears have been in use with good results to buyers. They are adapted for all classes of road work without straining.

Side or Centre Steering.

SIMPLICITY, SPEED, SERVICE.

READING AUTOMOBILE & GEAR CO.,

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DO YOU WANT BUSINESS FROM AUSTRALIA AND THE ISLANDS of the SOUTH PACIFIC?



Write to J. E. BISHOP & CO., Castlereagh Street, Sydney, Australia, and 165 Queen Street, Melbourne, Australia.

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THE popularity of the "Oldsmobile" has become so marked that we take this opportunity to notify all imitators and infringers that, while our motor is covered by our engine and designed patents, we have a number of applications for patents upon the mechanical improvements in our device, which are allowed, covering nearly every part of the machine.

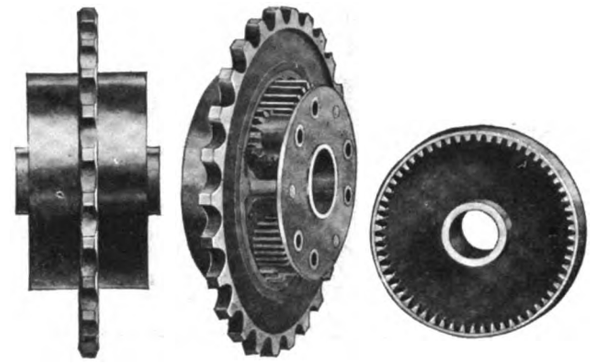
ILLUSTRATED CATALOG ON APPLICATION.

Olds Motor Works,

53 CONCORD AVENUE,
DETROIT, MICHIGAN.

THIS IS MODEL 4.

The strongest construction of Equalizing Gear in the world.



Spur Internal Gears and Pinions

We've five other models and a large variety of sprockets for each.

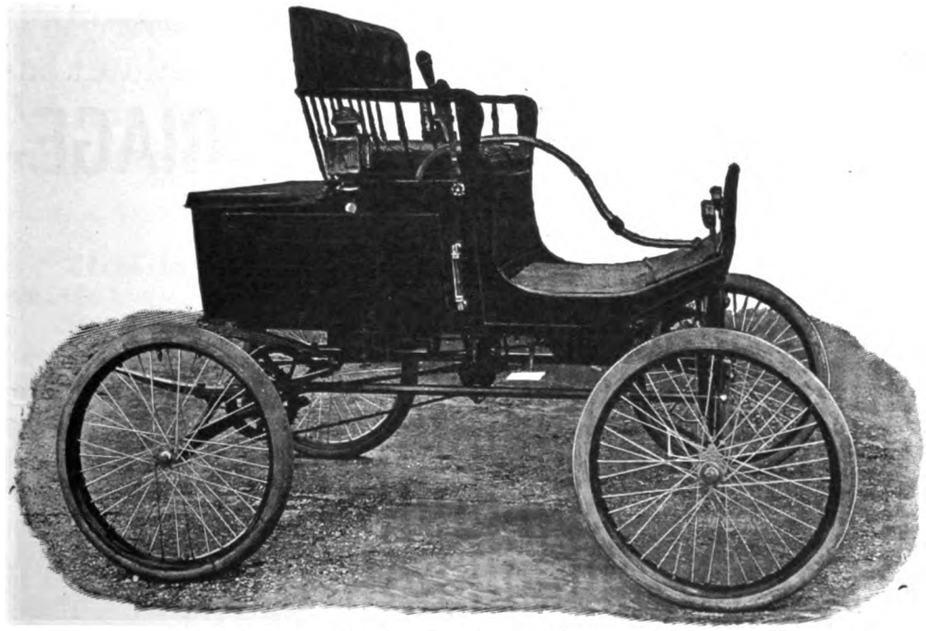
In model 4 two brake bands act on the internal gears (driving members of the equalizer) and the brake is thereby transmitted directly to the axle, forming an absolutely reliable brake. If one ground wheel should be wrecked, a key lost, a brake band become ineffective, or other things happen which would render useless other brakes applied to other equalizing gears, there is with the model 4 always one brake that would work.

A Brown-Lipe Equalizer adds value to an automobile. It's another good selling feature.

SPROCKETS of all kinds MADE TO ORDER.

BROWN-LIPE GEAR CO.,

212 S. GEDDES ST., SYRACUSE, N. Y.



IN recognition of the importance of the industry established by The "Mobile" Company of America at Kingsland-Point-on-the-Hudson, the New York Central & Hudson River Railroad has established a station at the factory of The "Mobile" Company with a service of twenty-five trains a day.

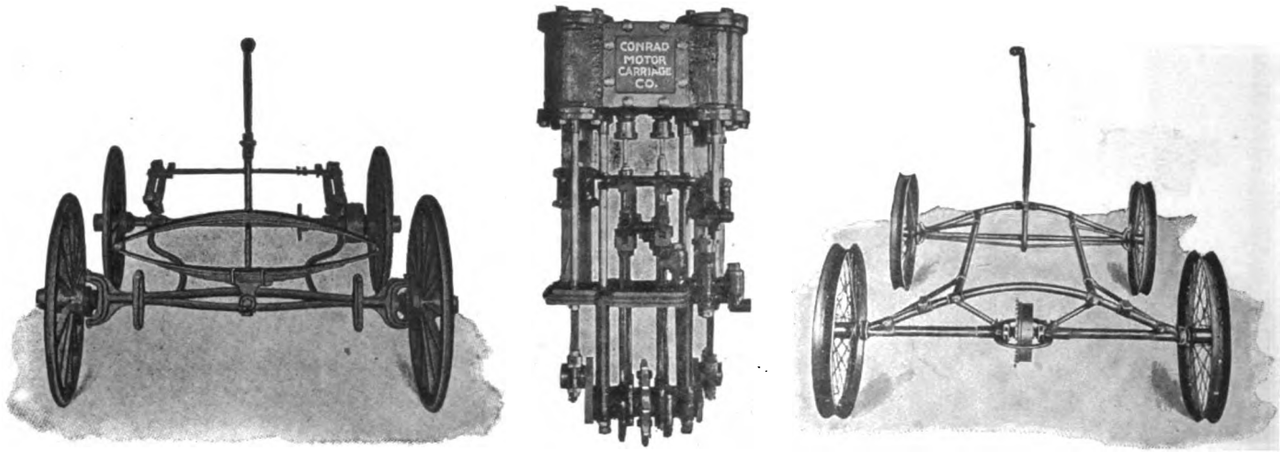
The original Philipse Manor, two hundred and twenty years old, still stands on the company's property, and the railroad company has appropriately, in view of its historical and literary associations, given this name to the station. The run from the Grand Central Station in New York is one hour. The manor house and old mill and Sleepy Hollow are part of the company's property, connected by the Headless Horseman's Bridge. The old Dutch Church, and Washington Irving's grave and the monument marking the spot where André was captured, are in the immediate vicinity. When you visit New York, you will find a trip to the factory of

THE "MOBILE" COMPANY OF AMERICA

quite worth a half day's outing. Kingsland Point itself is considered to be the most beautiful section of the Hudson. The visitor is looked after by The "Mobile" Company's corps of demonstrators, taken for a ride in a horseless carriage, and shown all the different processes which enter into the fifteen departments required to manufacture a horseless carriage. He may inspect both quality of material and workmanship, see the new carriages tested as they are taken from the works one after another, and have every opportunity to satisfy himself of the excellence of the carriage in every particular. **Price, $750 Complete.**

THE "MOBILE" COMPANY OF AMERICA, Philipse Manor Station, Tarrytown, N. Y.

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AUTOMOBILE

Engines, Boilers, Running Gears, Differentials, Running Gear Frame Fittings, Rough or Machined.

STEAM DELIVERY WAGONS.
STEAM STANHOPES.
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Carriage Builders, build your own Automobiles. We can furnish you the parts, together with blue prints, and all necessary data, for piping up and assembling your first jobs.

Our Steam Carriages are running successfully, and have all the latest improvements.

Catalogue on application.

THE CONRAD MOTOR CARRIAGE CO.,

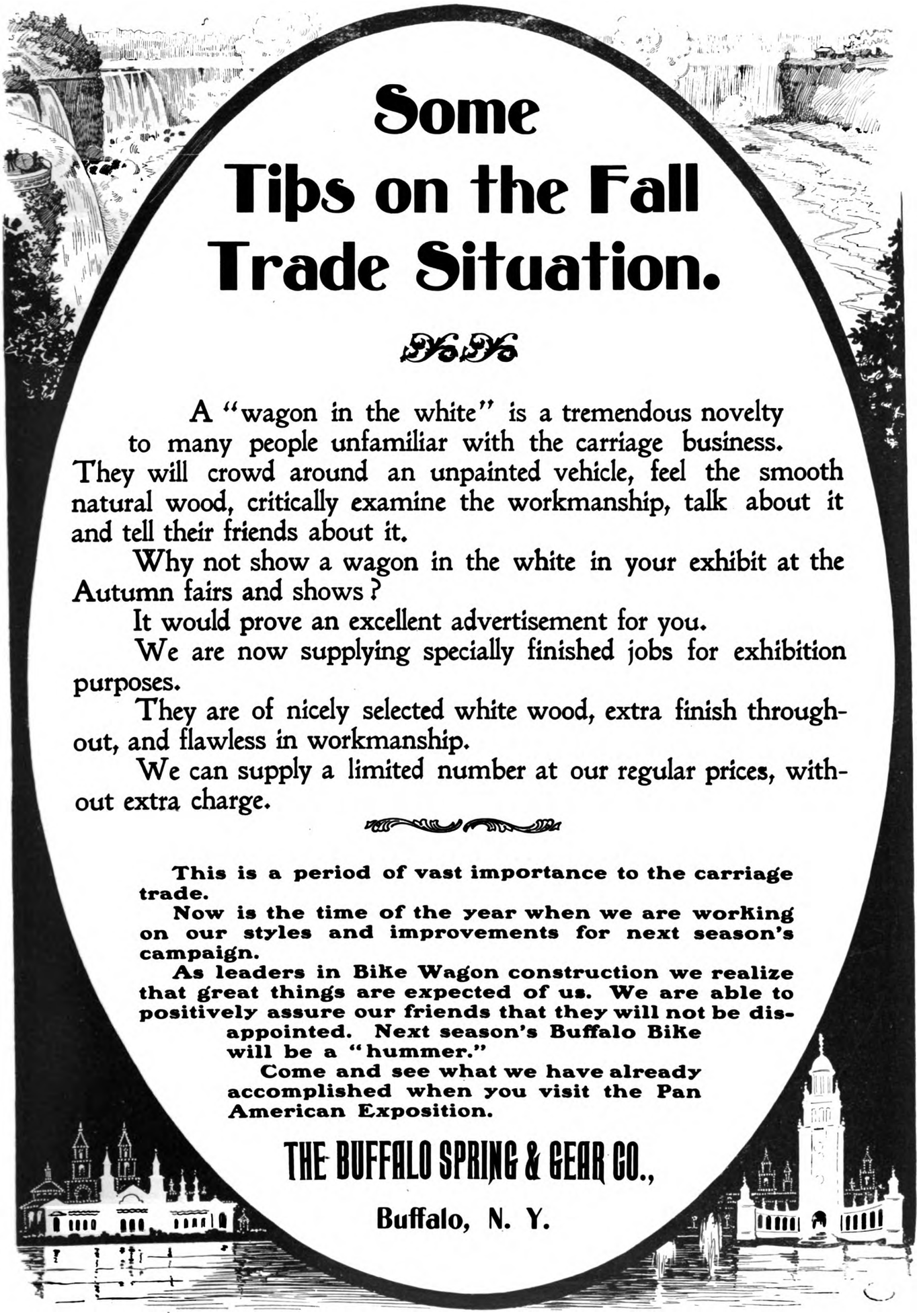
1417 NIAGARA STREET,

BUFFALO, N. Y.





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Some Tips on the Fall Trade Situation.

A "wagon in the white" is a tremendous novelty to many people unfamiliar with the carriage business. They will crowd around an unpainted vehicle, feel the smooth natural wood, critically examine the workmanship, talk about it and tell their friends about it.

Why not show a wagon in the white in your exhibit at the Autumn fairs and shows?

It would prove an excellent advertisement for you.

We are now supplying specially finished jobs for exhibition purposes.

They are of nicely selected white wood, extra finish throughout, and flawless in workmanship.

We can supply a limited number at our regular prices, without extra charge.

This is a period of vast importance to the carriage trade.

Now is the time of the year when we are working on our styles and improvements for next season's campaign.

As leaders in Bike Wagon construction we realize that great things are expected of us. We are able to positively assure our friends that they will not be disappointed. Next season's Buffalo Bike will be a "hummer."

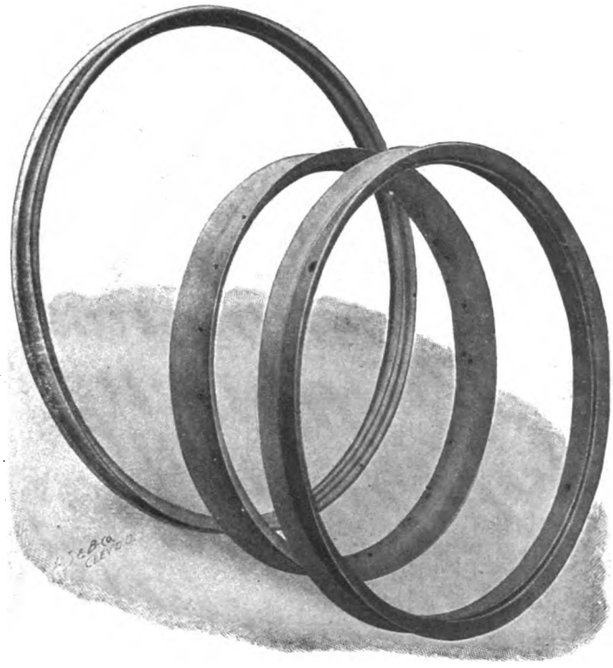
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THE BUFFALO SPRING & GEAR CO.,

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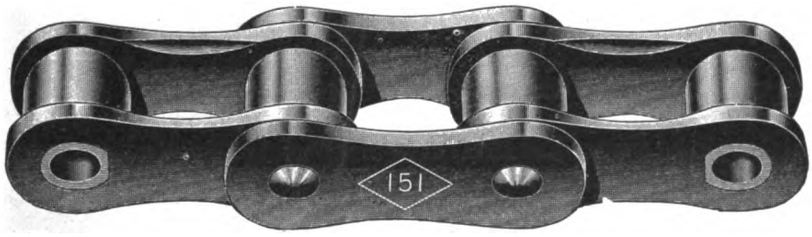
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The Automobile and Cycle Parts Co.

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AUTOMOBILE CHAINS.



No. 151 'Diamond" Automobile Chain.

Pitch, 1¼ inches; width, ½ inch; diameter of rollers, ⅝ inch; thickness of sides, .125

This pattern has polished straw tempered hard rollers, hard steel bushings (**not split**), hard rivets, full polished blue 8 sides "chanfered." **Its tensile strength is 6,500 pounds.**

We have been making chains, and nothing else, for nine years. Our factory is exclusively equipped for chain manufacture. It is the largest chain plant in the world.

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Our regular stock line consists of Tool Steel Balls in sizes from $\frac{1}{16}$" to 4" in diameter. We can grind balls to any of the intermediate sizes at special prices which will be promptly quoted upon application. Can also furnish balls in Bessemer steel, brass, bell metal, etc.

The Automobile and Cycle Parts Co.,

CLEVELAND BALL AND PEDAL FACTORY,

CLEVELAND, OHIO.



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The Hub

(THE HUB NEWS.)

Copyright, 1901, by The Trade News Publishing Co., of N. Y.

Entered at the New York Post Office as Second Class matter.

VOL. XLIII. NEW YORK, AUGUST, 1901. No. 5.

Publishers:

TRADE NEWS PUBLISHING CO. OF N. Y.

24-26 MURRAY STREET, NEW YORK.

W. H. TAYLOR, *President.*

WALTER D. GREGORY, *Secretary and Treasurer.*

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THE HUB is published monthly in the interests of employers and workmen connected with the manufacture of Carriages, Wagons, Sleighs, Automobiles and the Accessory trades, and also in the interests of Dealers.

Subscription Price for U. S., Canada, Mexico, Cuba, Porto Rico, Guam, The Philippines, and the Hawaiian Islands, $2.00, *payable strictly in advance.* Single copies, 25 cents. Remittances at risk of subscriber, unless by registered letter, or by draft, express, check, or post-office order payable to the order of TRADE NEWS PUBLISHING CO.

For advertising rates, apply to the Publishers. Advertisements must be acceptable in every respect. Copy for new advertisements must be received by the 25th of the preceding month, and requests to alter or discontinue advertisements must be received before the 12th day of the preceding month to insure attention in the following number. All communications must be accompanied by the full name and address of writer.

FOREIGN REPRESENTATIVES.

FRANCE.—L. Dupont, publisher of *Le Guide du Carrossier,* 78 Rue Boissiere, Paris. Subscription price, 15 francs, postpaid.

GERMANY.—Gustave Miesen, Bonn a. Rh. Subscription price, 12 marks, postpaid.

BACK NUMBERS WANTED.

WE are short of copies of THE HUB for May, 1899, and July, 1901, there having been an unusually large demand for these issues. To anyone sending us one or both of these numbers we will mail receipt for three months' subscription for each copy, if sent to us by mail or express, charges prepaid, and if the copies are in good condition.

TRADE NEWS PUBLISHING CO.

24-26 Murray street, New York.

An Offensive Assault.

IN the *Carriage Monthly* for July last, there appeared an editorial entitled "A Case of Mental Astigmatism—and Worse." The article has for its ostensible object the condemnation of THE HUB for its defence of the carriage trade against the charge that there has been a decline in the production of high grade carriages since 1876. The language used therein is of so vicious a character that it must stand as a disgrace to trade journalism. We may excuse the ignorance of carriage building by the writer, but there can be no excuse for the man who under the guise of an argument utters a philippic that would disgrace an exposed charlatan. Were the article less coarse and pettish, we would reproduce it in full, instead of making a few quotations, as we have in our answer to it, but as it is, we prefer that it be read from the *Monthly,* which it so much dishonors. THE HUB is ready to contest for principles, and therefore finds itself compelled to notice this jeremiad, but further than this we do not intend to enter the arena to combat with educated ignorance. There was nothing in THE HUB'S action regarding the matter in question to call for a personal assault, or to invite meaningless invectives, and the fact that the *Monthly* took that course to defend itself, instead of offering proofs to sustain its position, or admitting its error, shows the weakness of its position, or evidences its conceit, and bears out the words of an eminent writer that "A flippant, frivolous man may ridicule others, may controvert them, scorn them; but he who has any respect for himself seems to have renounced the right of thinking meanly of others."

The C. B. N. A. Convention.

In July HUB we published the official circular of the Executive Committee of the C. B. N. A. sent us by Secretary McLear, calling attention to the fact that the convention will meet in Cincinnati, O., on October 21st, and will continue through that week, the business meetings being held on the 22d, 23d and 24th. A large hall has been secured for the exposition of everything pertaining to the construction of carriages and automobiles, but not for finished vehicles. Ample space will also be provided for the display of harness and harness materials, saddles, etc. To secure space exhibiters must apply to Secretary McLear by mail, citing the amount of room required, which will be allotted to the best possible advantage to all concerned. We republish this month the table of rates for space, and call direct attention to them. There is every reason to anticipate a very large meeting this year. Cincinnati has always been

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a popular location with the C. B. N. A., and no meeting ever held by the association in that city has been other than a great success, and there is no reason why this year should be the exception. The carriage trade has been more than good, and without doubt the builders in the central west obtained the cream, or at least a good part of it, and they will be in the best of humor both to greet their friends from other places and to join in making the meeting a memorable affair. There is one thing to recommend the meeting of the C. B. N. A. that makes it to differ from others. It is no place for the men who have axes to grind, nor rivals to punish. There is no "black book." The man who undertakes to ventilate his own troubles, unless they are in a measure the troubles of all, won't be listened to. John and James may not be the best of friends, each may have done something to his fellow that was not looked upon as right, but neither will be allowed to ventilate his personal grievance in the meetings. The primary object is the social well-being of all, forming acquaintances and discussing those matters that contribute to the general good. The whole object of the organization is to benefit the carriage trade as a whole, and to create a fraternal feeling among the members. Congratulations rather than recriminations are the order, and many are the unpleasant memories that are cleared away at each meeting. The exhibit of materials is always an interesting one, and as a rule it is a good place for booking orders. The banquet is an event that leaves pleasant memories, and creates a desire for a return each year. Then there is the technical school, the most successful of schools of its character in the world; a school that has made scores of competent designers, draftsmen and constructors, and the only one that we know of that is kept up solely by contributions from the trade. All are before you, and as the summer holidays will be but memories at the time of the meeting, all may go with the assurance of receiving a cordial reception, and return with feelings akin to happiness to renew the work of the year and the effort to make the American carriage the world's model.

American Manufactures.

There is an amusing side to the present European scare over American competition. We can recall without much of a tax upon our memories when the products of the American workshops were novelties abroad, and the wise-acres then scorned the possibility of a competition with their products. But now all is changed, and almost without exception all Europe is devising ways and means to keep out the American intruder. One country offers a bounty to home shoe manufacturers, another retaliates by added tariffs and trade restrictions. Others suggest a combination of states. Scarcely a legislative body meets that does not have American competition before it as a subject for serious debate, and various pretexts are resorted to to check the inflow of American products. The latest that has come up is the reported act of Italy in putting American plows on the high tariff list as "works of art." The American farmer has long known of the practical value of the American plow, but he has not realized that in addition to its utility it is a "work of art," and as such must be taxed to protect the artists of Italy. We have long been convinced that many of our manufactured products are "works of art," and if "works of art" are to be taxed we can see how easy it will be for Europe to prevent American products coming in competition with them. Even the cans in which vegetables and fruit and corned beef are packed in can be put on the "art" list, and their admission to European markets retarded. Yet in the face of all these subterfuges our exports continue to grow, and the European consumer shows his appreciation of them by buying to an extent that invites their being shipped in greater quantities each year. We may therefore continue our manufacture of "works of art," whether they are plows, carriages, reaping machines, boots and shoes or even corned beef.

Our Timber Supply.

In July HUB we published an interesting communication from Hon. Geo. Sengel, Fort Smith, Ark., regarding the timber supply of that State. The fact that the older sections of our country, from which we have been drawing our carriage timber supply, are nearly denuded of first class stock and seconds are growing scarce necessitates looking elsewhere for the needed supply. In the early sixties the carriage builder could not think of a possibility of obtaining good hickory or second growth white ash except from a section of the country embracing New York, Massachusetts, Connecticut, New Jersey, Pennsylvania, giving preference to New Jersey and Connecticut growth. They saw this stock wasted and sold as firewood, but raised no protest, as they fancied that the supply would never be cut off, although the export of hickory had become quite large, and it was not until the great boom given to manufactures by the war that they begun to realize the danger ahead; but as Ohio and Indiana were contributing freely, nothing was done to check the waste until too late, and they were suddenly confronted with a shortage in the East and the necessity of cutting small trees in the West. Before this time the South was not looked to as a possible field for supply, but the discovery that North Carolina had large tracts of prime hickory ready for use caused attention to be turned toward those States, and notwithstanding the wonderful increase in the demand for hickory the supply appeared to be adequate. The need of long butts caused another prospecting tour, and to the surprise even of men who claimed expert knowledge a new source of supply was developed, notably in Eastern Kentucky and in Tennessee, but more recently in Arkansas, and now we are learning that in the latter State there are large tracts well wooded with hickory, oak and white ash, and further that straight-grained long butts could be procured of a fine quality. It is true that the distance from the forest to the workshop is increased, but transportation facilities have increased also, and with the cutting and sawing in sizes and shapes at or near the forests, the transportation cost is reduced to an extent that makes the cost at the factory but little more than when shipped in bulky form with all the wastage as an additional burden. Should this Southwestern supply prove as the present knowledge indicates, the carriage trade will have supplies for a decade or more to come, and it will depend upon the States heretofore supplying these woods, through forestry legislation, to encourage the growing of hickory and ash, on grounds that are now scarcely worth the taxes, to place us in a position that will insure an ample supply for all time to come.

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CARRIAGE MATERIAL EXHIBIT, AT THE C. B. N. A. CONVENTION, CINCINNATI, OCTOBER 21 TO 26, INCLUSIVE.

THE space for the exhibits will be marked off into 4, 8 and 12 feet wide sections, and running continuously from aisle to aisle, longitudinally of the space, with aisles on either side and at the ends of the parallelogram so formed. This space will be sold in multiples of four feet, according to the following scale of prices:

4 x 4 feet—	16 feet	$ 5.00
4 x 8 feet—	32 feet	10.00
4 x 12 feet—	48 feet	15.00
8 x 8 feet—	64 feet	20.00
8 x 12 feet—	96 feet	30.00
8 x 16 feet—	128 feet	40.00
8 x 20 feet—	160 feet	50.00
8 x 24 feet—	192 feet	60.00
8 x 28 feet—	224 feet	70.00
8 x 32 feet—	256 feet	80.00
8 x 38 feet—	304 feet	90.00
8 x 42 feet—	336 feet	100.00
8 x 46 feet—	368 feet	110.00
8 x 50 feet—	400 feet	120.00

Larger space in the same proportion. Floor space only will be sold. This may be arranged by the exhibitor with desk, chairs, tables, railing, etc., to suit his needs, but the committee does not agree or undertake to supply any of these articles.

Space about the sides of the Hall of Exhibits will be devoted, as far as possible, to exhibitors requiring wall space for standing, hanging, paneling or displaying in booths. No exhibits of this character will be assigned space in any part of the hall that will interfere with the general level of floor or table exhibits.

No signs in the body of the hall shall extend upward to exceed 7 feet above the level of the floor, excepting those that may be displayed on the walls or on the sides of the hall.

No signs of any description will be allowed that interfere with another exhibitor, deprive him of light or prevent him from showing his goods in a proper manner.

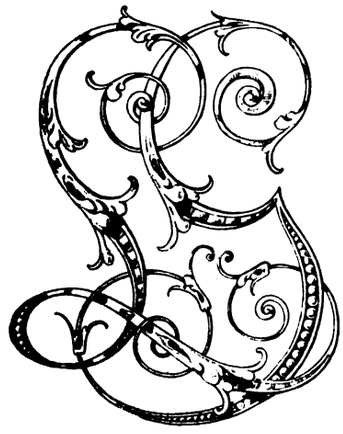
The installation, arrangement and care of exhibits must be done by and at the expense of the exhibitors. The association will supply space, light and heat, and will police the premises in the usual way. No nails, tacks or screws shall be placed or driven into the walls or floors, and all signs and decorations must be put up without defacing the building.

Any damage to the building by any of the exhibitors must be settled for before the exhibits are removed from the building.

The association assumes no responsibility whatever for care of exhibits, boxes, crates, etc., except as above stated.

Application for space should be made to the secretary NOW, and should state the nature of the exhibit as well as the space required. As far as it is possible, the space will be assigned in order of receipt of application, and the best location, if any, given to those making early application.

Payment for the space taken can be made with the application, or if the exhibitor prefer, can be made at any time prior to October 1, 1901. Receipts for same will be returned by the secretary, and said receipts will be received as voucher, for space, when presented to the superintendent at the hall.—Extract from Secretary McLear's official notice.



L. G.

Description of Latest Styles.

ENGLISH STANHOPE GIG.

Scale, ½ in. to the foot.

(See Fashion Plate No. 516.)

FASHION PLATE No. 516 illustrates an English Stanhope gig, drawn expressly for THE HUB by an English carriage draughtsman, who also gives the following description:

The Stanhope gig is one of the oldest styles of English carriages that has survived the change, and defied the attacks of fashion, to dislodge it from the rank of fashionable carriages.

It has undergone many changes in shape and in the style of hanging, but it has always held its position as a gentleman's two wheeler.

The design we give here is the latest style in shape of body and general hanging. The body is suspended upon platform springs, but on an improved method over the old plan of centre block and rigid shaft framing. The springs are fixed to the axle flaps, and the body is suspended on the cross springs upon centre stays. This new method admits of a longer side spring being used and broader distribution of the weight. The spring ends are forged and fitted to take cow mouthed shackels.

The shafts are fixed to the body with fulcrum stays and with hind cross spring, which takes the horse's action, the shafts being fulcrumed and attached to a cross spring act independently of the body, which is a vast improvement on rigid shaft hanging. The steps are of original design, the tread guard is fendered, the top tread stem being shut into the centre headpiece and curved in between the wheel and the shaft. This is a very smart and improved design of gig, and if well finished would be an ideal two wheeler of its kind.

The shaft fulcrum stay is forged with open jaw and L feet to bolt to body. Width of shafts at splinter has 32 in.; between points, 24 in.

Dimensions of Woodwork.—Body, width at bottom, 30 in.; at top, 33 in.; across top at pillars, 44 in.; across bottom at pillars, 30½ in.; on seat across pillars, 40 in. Wheels, wood hub; height, 4 ft. 6 in. Hubs, length, 8 in.; diam. at center, 6 in.; front end, 4¼ in.; back end, 5 in. Size of spokes, 1⅝ in.; number of spokes, 14; stagger, ⅝ in.; depth of rims, 1⅝ in.; tread of rims, 1 7-16 in.; depth of bands, front, 3 in.; back, 1⅛ in.

Dimensions of Ironwork.—Springs, side, 38 in. long between centers of heads, with 4½ in. opening on main leaf; width of steel, 1½ in.; number of plates, 5; thickness, No. 3 steel; cross, 38 in. long, with 6 in. opening on main leaf; width of steel, 1½ in.; number of plates, 5; thickness, No. 3 steel. Axles, 1¼ in. Tires, 1½ in. by ⅜ in. Track, outside, 4 ft. 8 in.

Painting.—Body, black; seat panels, dark olive green; pillars, light olive green. Gear, dark olive green, striped with a heavy line of light olive green. Trimming, green cloth. The inside of seat is tufted, the tufts are slightly drawn; driver's seat plain; cushion squabbed. Finish, rails, lamps, etc., black.

PARK WAGON.

Scale, ½ in. to the foot.

(See Fashion Plate No. 517.)

FASHION PLATE 517 illustrates a stylish park wagon built by a well known New York City manufacturer. The rockers extend beyond the body lines front and back and are bent to form a continuous frame around the body, the end sections forming supports for the springs. The suspension at each end consists of a half spring with ends turned over to the C shape and a half spring taggled to the eyes of the C ends. The gear has arched axles with wood beds clipped to the iron, and a straight perch.

Dimensions of Woodwork.—Body, width across top of seat at back, outside, 40 in.; across bottom, 32 in.; width at seat, outside, 36 in. Wheels, height, front, 39 in.; rear, 43 in. Hubs, length, 7 in.; diam. at center, 4½ in.; frond end, 3¼ in.; back end, 3¾ in. Size of spokes, 1⅜ in; number of spokes, 12 and 14; stagger, ½ in.; depth of rims, 1⅜ in.; tread of rims, 1⅛ in.; depth of bands, 3 in.; back, ⅞ in.; distance between center of axles, 53 in.

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Dimensions of Ironwork.—Springs, front, 36 in. long between centers of heads, with 6 in. opening on main leaf; width of steel 1⅜ in.; number of plates, 4; thickness, main, No. 3; rest, No. 4. Back, 36 in. long, with 6 in. opening on main leaf; width of steel, 1⅜ in.; number of plates, 4; thickness, main, No. 3; rest, No. 4 steel. Axles, 1¼ in. Tires, 1⅛ in., solid rubber. Fifth wheel, 12 in. diam. Track, outside, 4 ft. 8 in.

Painting.—Body, including the side panels, is painted maroon, moldings and spindles are black; gear, maroon; bands, stays, clips, etc., black; trimming, maroon cloth, plain back and driver's cushion; finish, lamps are black.

DRIVING TRAP.

Scale, ½ in. to the foot.

(See Fashion Plate No. 518.)

Fashion Plate No. 518 illustrates a driving trap of the Spider class, hung high on a platform and two elliptic spring gear. This is a novelty in construction, as the rumble is made to fold under the main seat and to be hidden entirely from view by a continuous panel extending from the bottom up to the seat frame. A sectional drawing on page 200, accompanied by a description, explains the working of the rumble. The body is hung high in conformity with the present demand for vehicles of this class. The gear is also coupled very short, which tends to increase the apparent height of the body. Independent of the novel arrangement of the rumble is an up-to-date stylish driving vehicle.

Dimensions of Woodwork.—Body, width, outside, top and bottom, 30 in.; width of seat across top at back, outside, 40 in.; across bottom, 35 in. Wheels, wood hub; height, front, 36 in.; rear, 44 in. Hubs, length, 7 in.; diam. at center, 4½ and 5 in.; front end, 3½ and 4 in.; back end, 4 and 4½ in. Size of spokes, 1 7-16 and 1 9-16 in.; number of spokes, 12 and 14; stagger, ½ in.; depth of rims, 1 7-16 in.; tread of rims, 1 3-16 in.; depth of bands, front, 2½ in.; back, ⅞ in; distance between center of axles, 46 in.

Dimensions of Ironwork.—Springs, front, 35 in. long between centers of heads, with 8½ in. opening on main leaf; width of steel, 1⅜ in.; number of plates, 4; thickness, main, No. 3; rest, No. 4 steel. Rear, 36 in. long, with 8 in. opening on main leaf; width of steel, 1⅜ in.; number of plate, 4; thickness, No. 4 steel. Axles, 1¼ in. Tires, 1¼ in by 5-16 in. Fifth wheel, 20 in. diam.; kingbolt, 3½ in. forward of center. Track, outside, 4 ft. 8 in.

Painting.—Body, black; pillars, slatwork and canework, light yellow; pillars and slats edged with carmine; the frame of seat is black. Gear, light yellow; hub bands, tires, clips, stays, etc., black; face of spokes carmine; single line of carmine on outside of rims, couple lines on hubs and stripe in gear in various places, using good judgment in not overdoing same. Trimming, gray whipcord; plain back and driver's cushion; face of cushion and edge of fall finished with broad lace. Fnish, rails, lamps, etc., black.

COLONIAL SURREY.

Scale, ½ in. to the foot.

(See Fashion Plate No. 519.)

Fashion Plate No. 519 illustrates a vehicle of the Surrey type, but on novel lines. The predominating feature being the columns that form the front of the seat ends and which suggest the name selected. These columns are turned and fluted and when made up they show the fluted finish around to a point where the trimming begins. The use of turned "collars" on the step supports further contribute to give special character to the vehicle. The light platform gear and coach springs at the rear are in keeping with the general character of the body.

Dimensions of Woodwork.—Body, width across top of seats, outside, 41 in.; across bottom, outside, 38 in.; width outside of rockers, 32 in.; seat side flare, 1½ in. Wheels, wood hub, hight, front, 36 in.; rear, 46 in.; hubs, length, 6½ in.; diam. at center, 4 and 4½ in.; front end, 3 and 3½ in.; back end, 3½ and 4 in.; size of spokes, 1⅜ and 1½ in.; number of spokes, 12 and 14; stagger, ⅜ in.; depth of rims, 1⅜ in.; tread of rims, 1⅛ in.; depth of bands, front, 2½ in.; back, ¾ in. Distance between center of axles, 75 in.

Dimensions of Ironwork.—Springs, front, 35 in. long between centers of heads, with 7 in. opening on main leaf; width of steel, 1⅜ in.; number of plate, 4; thickness, main No. 3 rest, No. 4 steel. Rear, 36 in. long, with 8 in. opening on main leaf; width of steel, 1⅜ in.; number of plate, 5; thickness, main No. 3 rest, No. 4 steel; back cross, 36 in. long, with 4½ in. set on main leaf. Number of plates, 5; thickness, main No. 3 rest, No. 4 steel. Axles, front, 1¼ in.; rear, 1⅜ in. Tires, 1⅛ in. by 5-16 in; fifth wheel, 18 in.; diam. kingbolt, 3½ in. forward of center. Track, outside, 4 ft. 8 in.

Painting.—The side and back seat panels, royal green; the vertical moldings and pillars at front of seat are olive green, the recesses of the latter dark green; seat moldings black; the bracket moldings or dusters, olive green, bead on edge, dark green. Rest of body black. Gear, olive green, striped with dark green. Trimming, green cloth. Finish, lamps, bands, clips, etc., black.

LADIES' TANDEM.

(See "Latest Styles.")

Plate CLVIII. illustrates one of society's latest fads, ladies' tandem. The cart as will be noticed is of peculiar construction, the body being of two half circles upon which the seat is mounted, a bent frame, paneled, extending from the underside of the seat frame to the dash bar, forms the foot rest.

LADIES' TWO WHEELER.

(See "Latest Styles.")

Plate CLIX. illustrates a two wheeler that is quite popular with ladies. It has a full bracket front, panel side and iron rail seat. A breast collar being used instead of a round collar.

BEACH WAGON.

(See "Latest Styles.")

Plate CLX. illustrates a beach wagon for six passengers. It is one of the popular summer vehicles at coast and inland resorts.

THE LARGEST HORSE DRAWN VEHICLE IN THE WORLD

(See "Latest Styles.")

Plate CLXI. Caley & Nash, of Brighton, N. Y., have built what we believe to be the largest horse drawn vehicle in the world. Length of body, 22 ft. 6 in. over all: width of body on top, 5 ft.; the body has a line under 2 in.; width of dress circle, 7 in.; length of dress circle on seat base, 10 ft., with large round corners. The end seats are 7 ft. long, 18½ in. wide. In the center of dress circle is large copper ice box. The doors in center, as shown in the illustration, are cut on each side and encloses store house. Small doors on each side encloses steel ladders, which draw out and extend from the doors to the ground for passengers to get access to the body. The rockers have a drop of 6 in. The center also extends out from body 4 in., as shown. Two tally-ho lamps are placed on each side and a search light under the toe board. The vehicle is equipped with a powerful grip brake and has roller bearing axles and Archibald wheels. Track, 6 ft.; height from ground to the top edge of the seat backs, 11 ft. The vehicle was built for Mr. E. F. Higgins, of Rochester, N. Y. It has a seating capacity for fifty people. The dress circle in the center seats twenty-six, and the other seats accommodate the balance. Mr. E. F. Higgins has one of the finest stables in the State, and Caley & Nash have built a number of other tally-hos, breaks and carriages of all kinds.

MARTIN PAYNE SPEED WAGON.

(See "Latest Styles.")

Plate CLXII. shows one of the Martin Payne speed wagons and the fast trotting mare Mamie Taylor, John E. B. Payne driving.

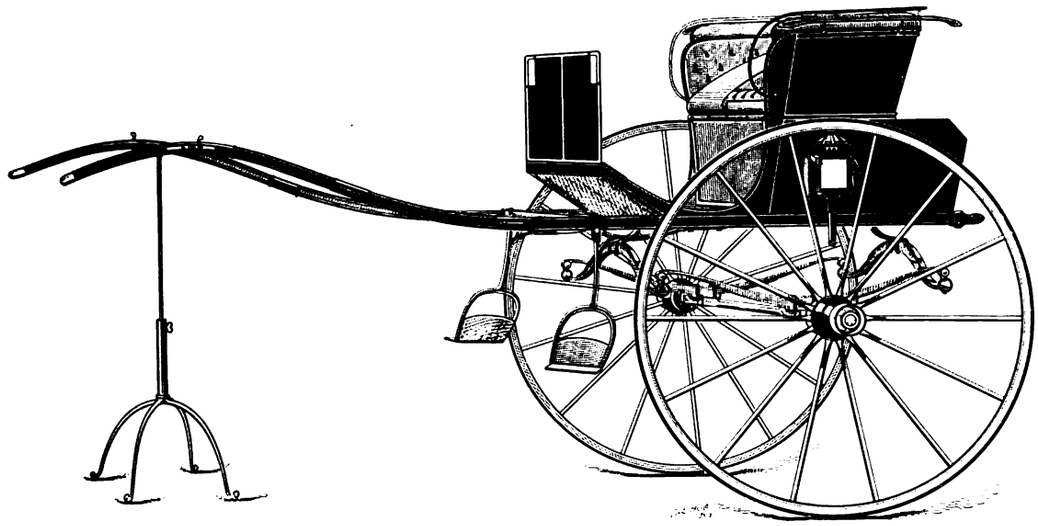
TANDEM IN CENTRAL PARK.

(See "Latest Styles.")

Plate CLXIII illustrates a familiar scene in Central Park, New York. There has been a notable increase in the number of tandems driven in New York City this season, and quite a variety in carts has been shown.

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Latest Styles. August, 1901

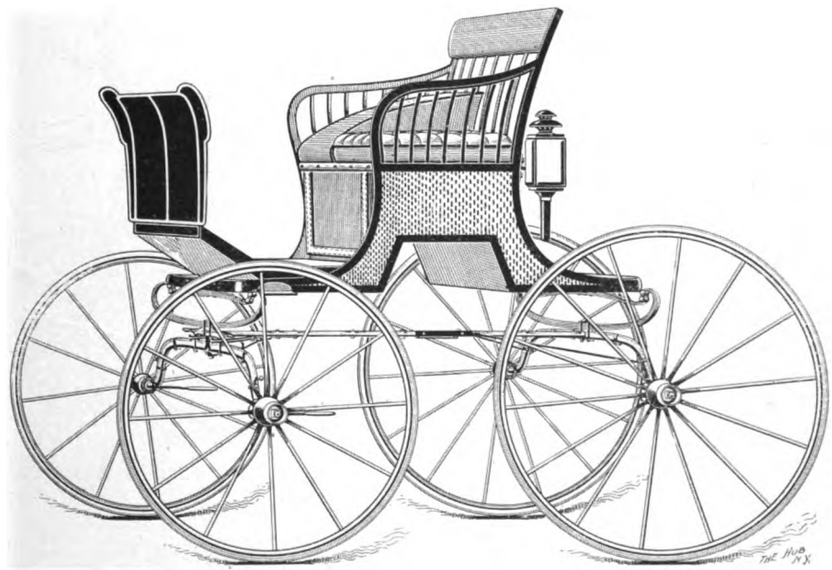


No. 516. English Stanhope Gig.

Scale, ½ inch to the foot.

See description under "Latest Styles."

(Electrotype, $1.25.)



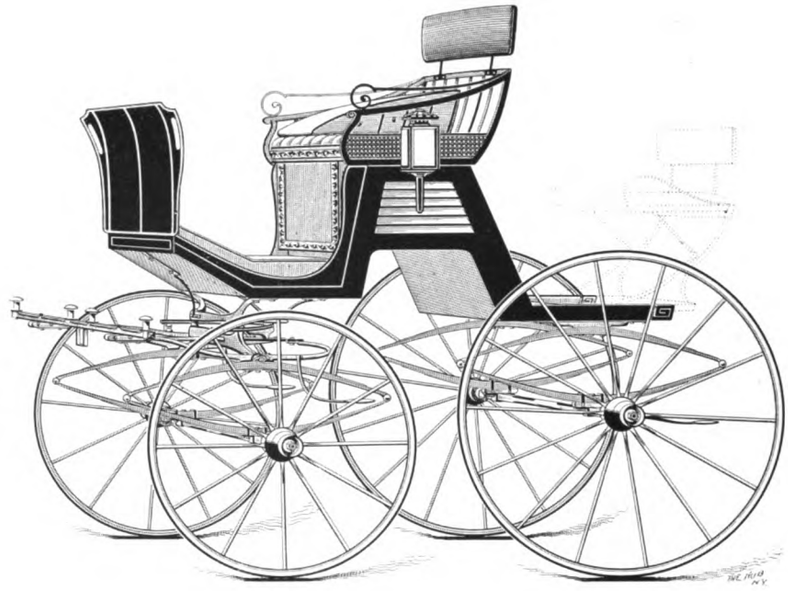
No. 517. Park Wagon.

Scale, ½ inch to the foot.

See description under "Latest Styles."

(Electrotype, $1.50.)

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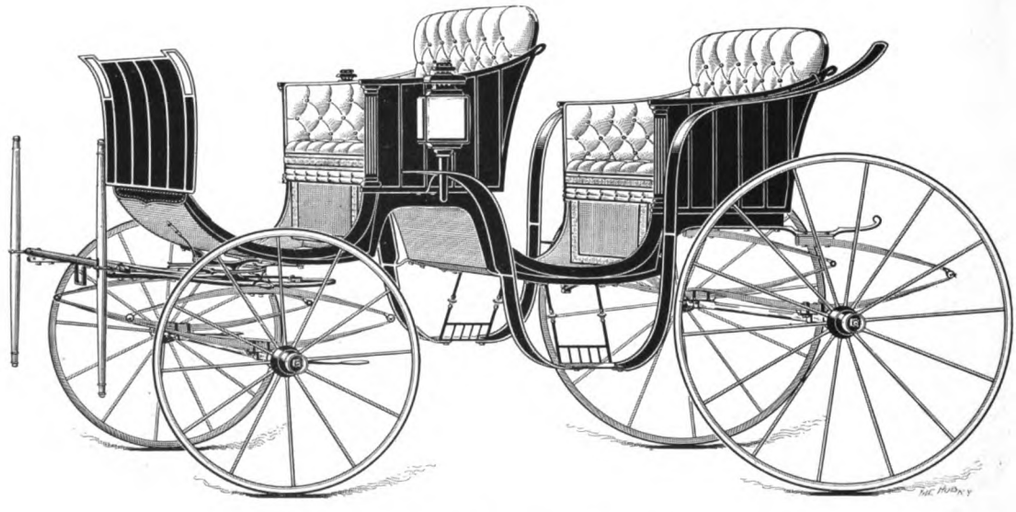


No. 518. Driving Trap.

Scale, ½ inch to the foot.

See description under "Latest Styles."

(Electrotype, $1.50.)



No. 519. Colonial Surrey.

Scale, ½ inch to the foot.

See description under "Latest Styles."

(Electrotype, $1.50.)

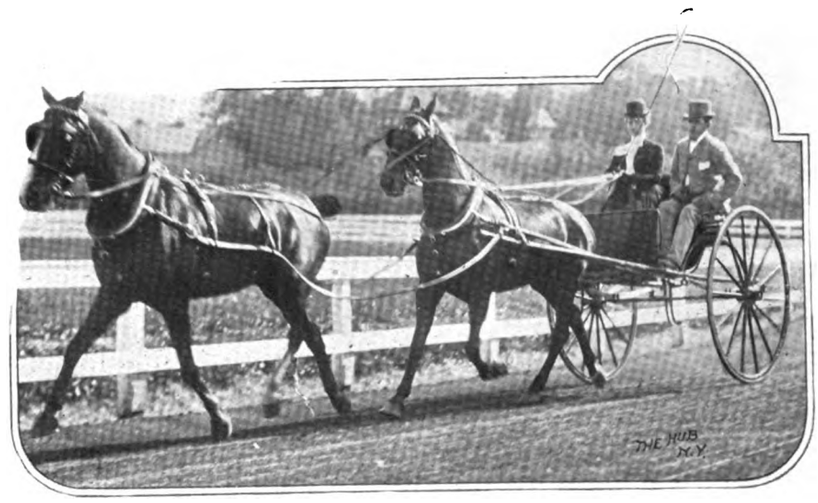
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Plate CLVIII.

Ladies' Tandem.

See description under "Latest Styles."

(Electrotype, $2.00.)



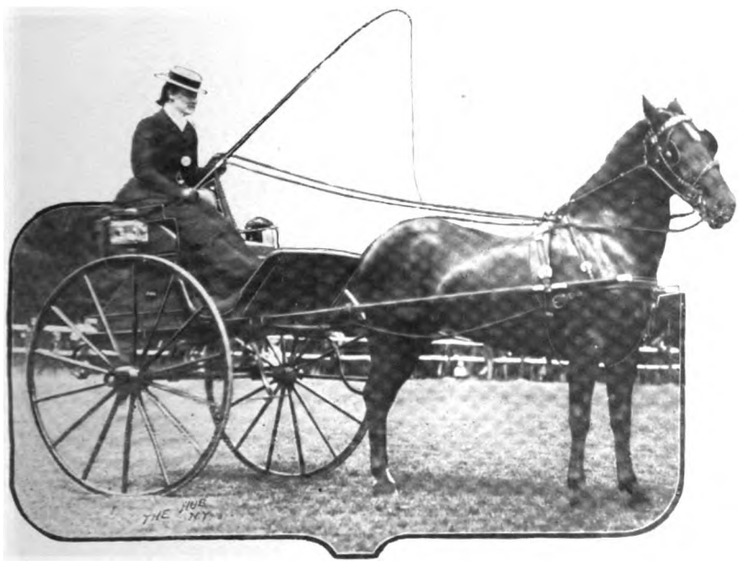


Plate CLIX.

Ladies' Two Wheeler.

See description under "Latest Styles."

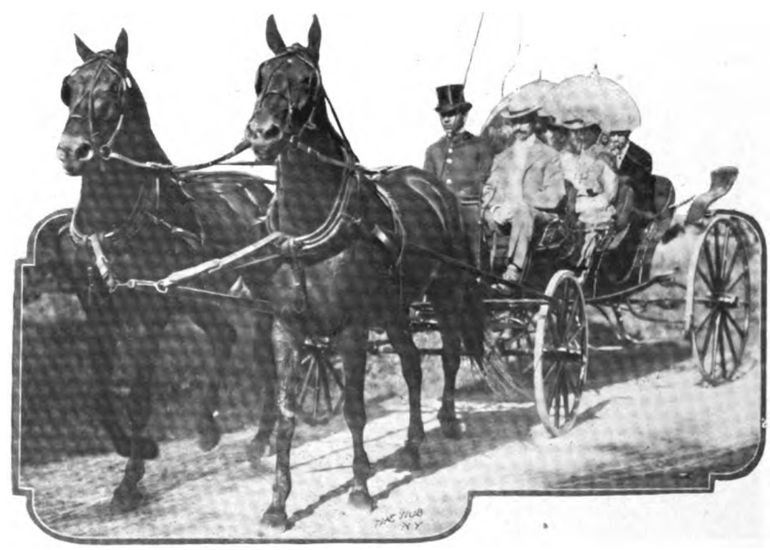
(Electrotype, $2.00.)

Plate CLX.

Beach Wagon.

See description under "Latest Styles."

(Electrotype, $2.00.)



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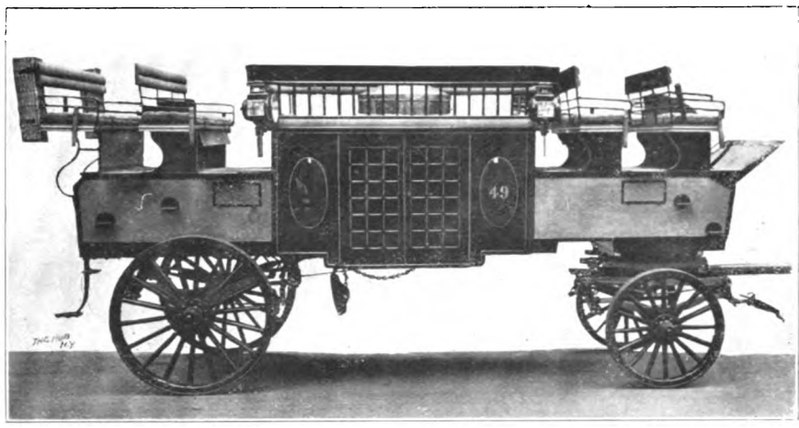


Plate CLXI.

Largest Passenger Wagon in the World.

See description under "Latest Styles."

(Electrotype, $2.00.)

Plate CLXII.

Martin Payne Speed Wagon.

See description under "Latest Styles."

(Electrotype, $2.00.)

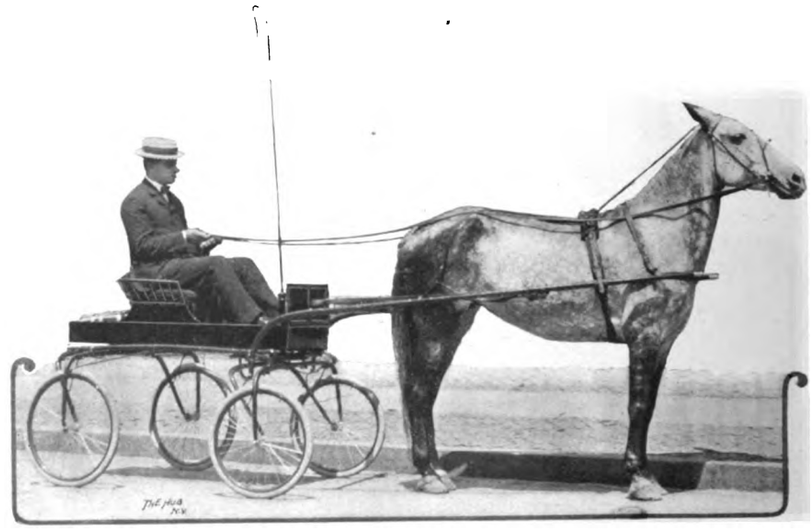




Plate CLXIII.

Tandem in Central Park.

See description under "Latest Styles."

(Electrotype, $2.00.)

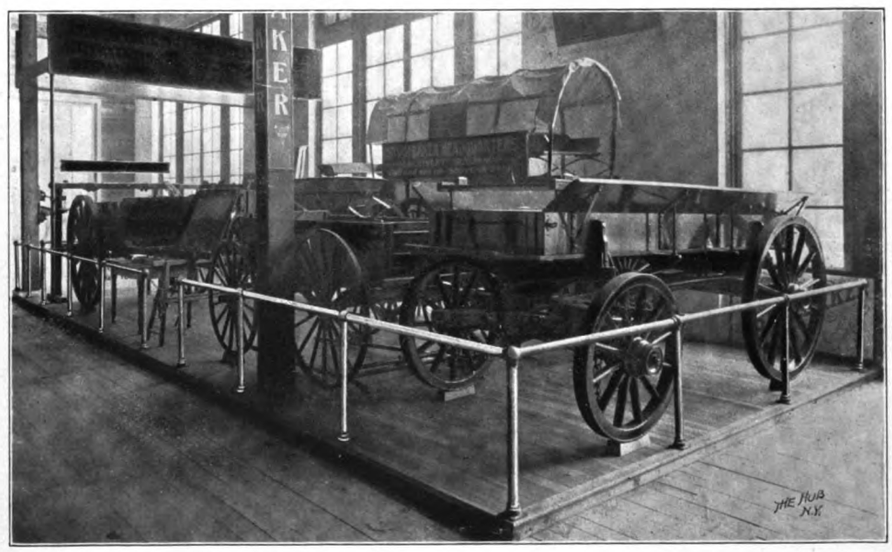
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Pleasure Carriages, Light and Heavy, Shown in the Machinery and Transportation Building.



Army Escort Wagon and Army Ambulance, Shown in the U. S. Ordnance Building.

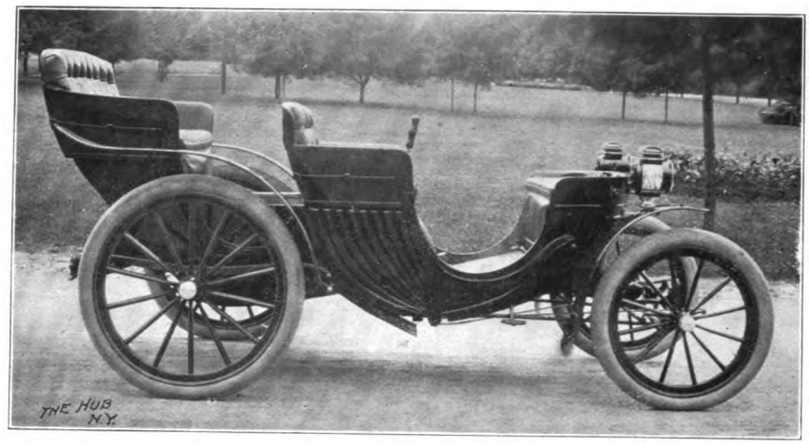


Farm Wagon, Contractors' Cart, and South American Farm Wagon, Shown in the Stadium.

The Studebaker Bros. Manufacturing Co.'s (South Bend, Ind.) Exhibit at the Pan-American Exposition.

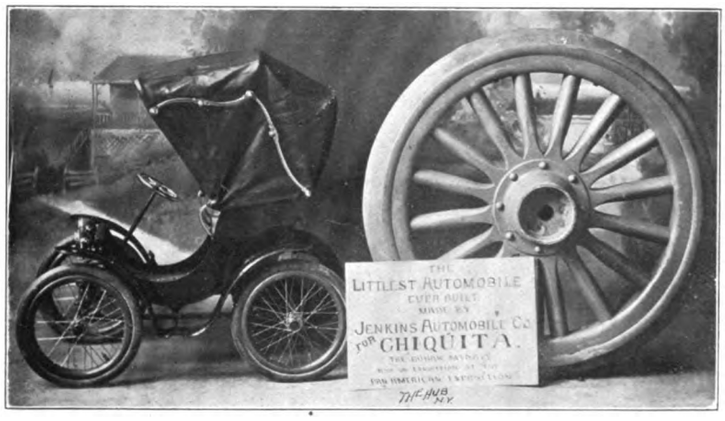
(See description in "Pan-American Exposition.")

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Duryea Power Co.'s Surrey.

For description, see "Automobile Department."



The Jenkins Automobile Co.'s "Smallest" Automobile.

For description, see "Automobile Department."



The Crestmobile.

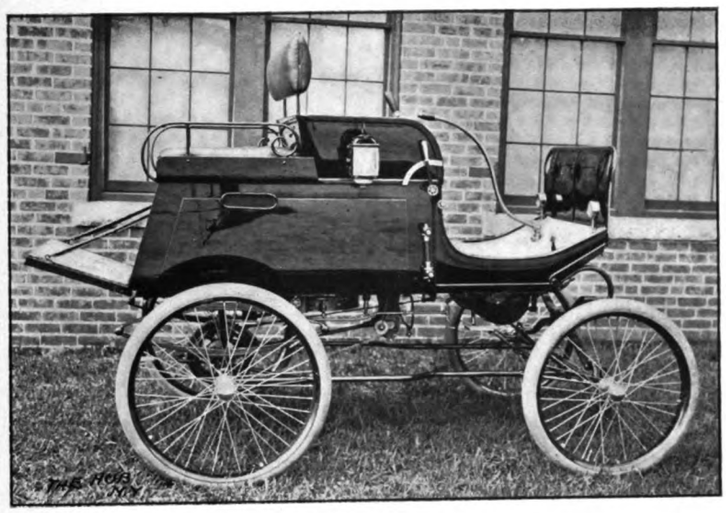
For description, see "Automobile Department."



Crowden's Steam Wagonette.

For description, see "Automobile Department."

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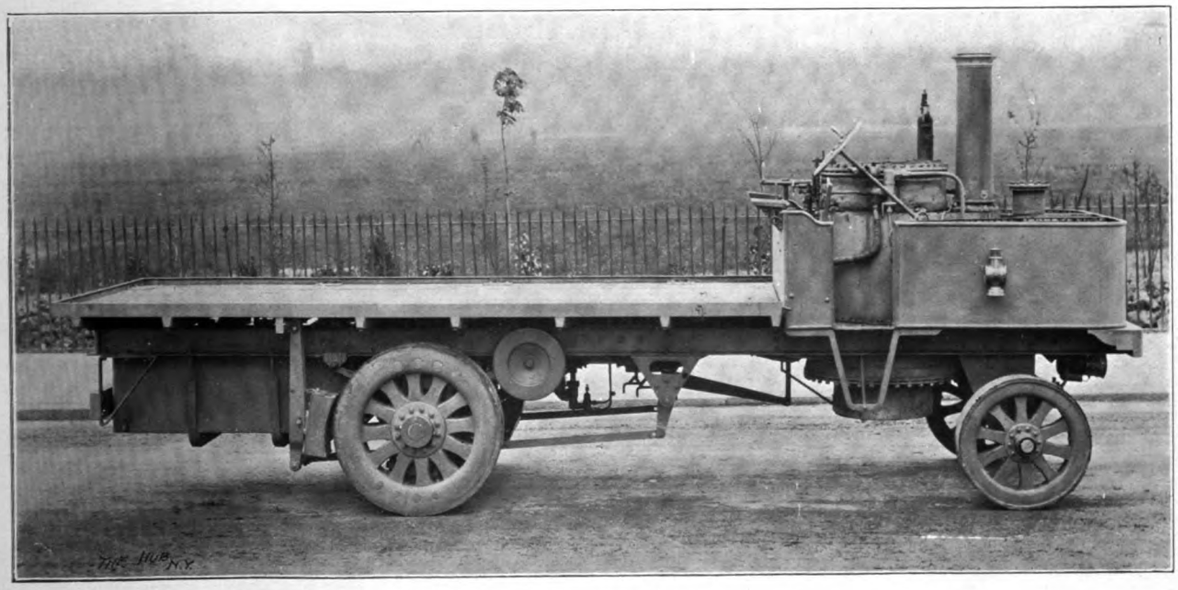
Grout Bros. Dos-a Dos.
For description, see "Automobile Department."



Grout Bros. Fire Chief's Auto.
For description, see "Automobile Department."

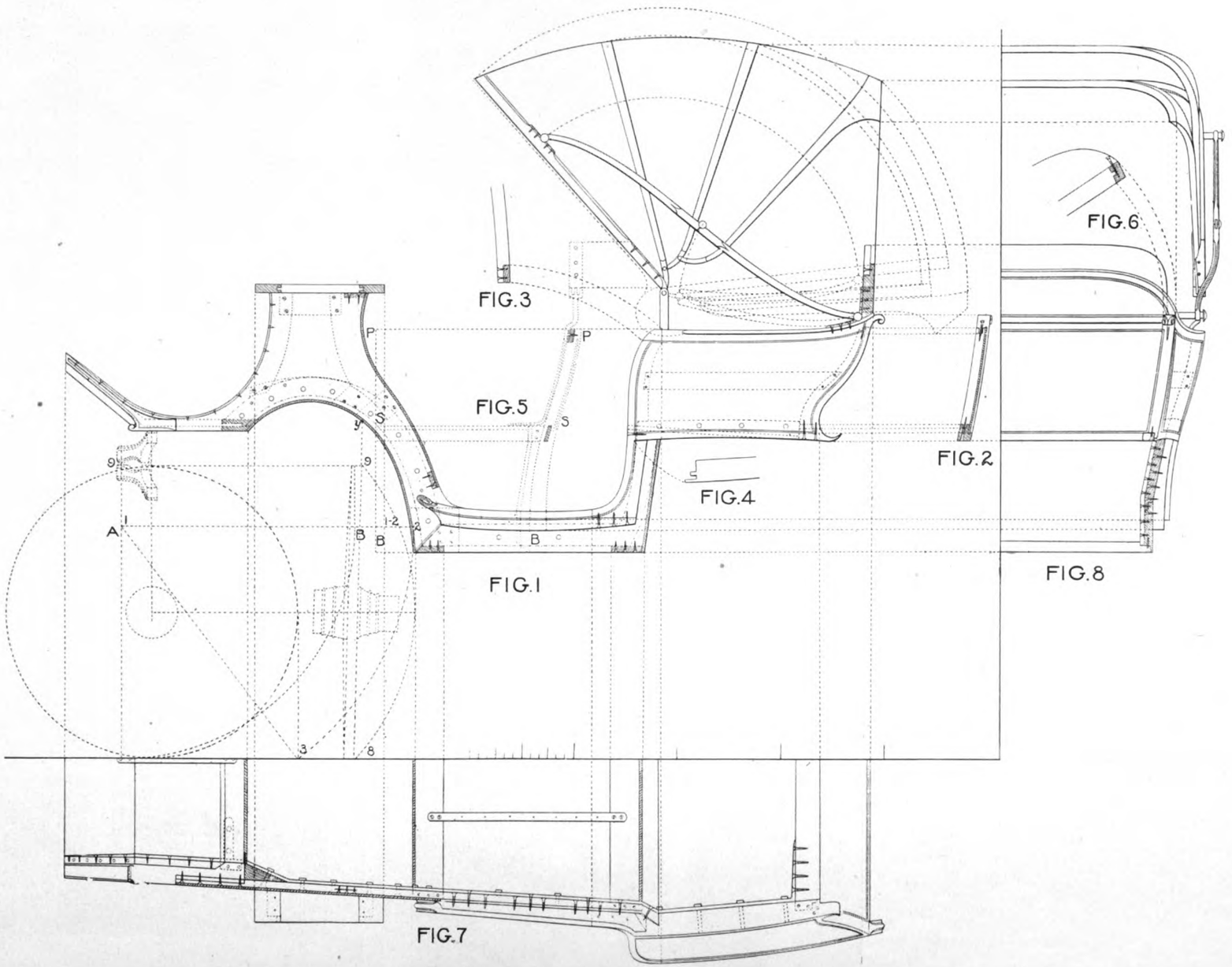


Grout Bros. Grocer Wagon.
For description, see "Automobile Department."



Thornycroft Steam Lurry.
For description, see "Automobile Department."

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WORKING DRAWING OF AN ENGLISH VICTORIA. SCALE, ¾ INCH TO THE FOOT.

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CARRIAGE TECHNICAL DEPARTMENT.

Comprising the Wood, Smith, Paint and Trimming Shops.

THE LATEST STYLE OF ENGLISH VICTORIA.

DRAWN EXPRESSLY FOR "THE HUB" BY AN ENGLISH PRACTICAL CARRIAGE DRAFTSMAN.

THE working drawing of a Victoria body on page 198 is designed without in any way following the slavish lines of the copyist, or of those who are, in a great degree, responsible for a hideous style which is without an incentive to artistic development for its existence.

The body is designed to give full and comfortable sitting room on the hind seat, with ample room for the legs from the seat rail to the bottom of the boot. The back line of the boot is drawn with a return curve, which harmonizes with the lines of the body throughout. In designing a carriage of this description, or similar carriages, with recessed boots, such as broughams, it is most necessary that the track of the wheels should be drawn on and developed, so that the recess of the arch curve may be fashioned to allow the required clearance at the center and top tracks of the wheels when on the lock under the arch (wheel house). Space should be allowed at these points for the deflection of the springs when the body is weighted. In the first place, the height of the boot bottom side from the ground should be determined; then the bracket and bottom side drawn on. The next point to decide on is the king bolt center, and the position of the under carriage beds, whether they be compassed or straight. The perch bolt center line should be dropped to the ground line of the wheel, and on this line set off. The half track of the wheel on the road, from A to B, Fig. 1. Then draw on the wheel through the centers of the carriage beds at the wheel or on heads, and drop the inner diameter to the ground line and connect the points by the line A, which, with point A as center, gives the track of the center of the wheel. To these points the curve of the arch must be subordinated, and the necessary spaces for clearance made for the deflection of the springs when the body is weighted. The development of the track of the wheels reads thus on the drawing: A, B, Fig. 1, half width of track of wheels on the road; the line 1, 3, the track of the center of the wheels, until it cuts the center line developed as per 1, 2, at point 2. The line 9, 9, gives the position of the wheel at the top when on full lock, under the arch, and 9 *y*, the amount of clearance that is necessary between the top of the body and the arch panel. The curved line 9, 8, shows the elliptical curve the wheel makes in its revolutions, on its vertical diameter, when traveling round to a full lock, and determines the space beyond which the arch panel must not be brought, if contact with the wheels center in locking is to be avoided.

In designing a body with a boot of this character, it is, as will be seen, most necessary that a body maker should also have a good knowledge of the suspension of carriages, so that his work may not be constructed with impossible positions for hanging and locking necessities.

The body is constructed in the framing on the principles of the highest class work, and that pursued by the very best English coach builders. The boot is framed of separate pieces of English ash, and framed by half checking, the laps being screwed together, as explained in the elevation drawing. The body plate is bolted to the sides, but screwed to the rocker, other than the step bolts, and bolted to the hind bottom side. The back and bottom arch panels of the boot are to be put on first, and the sides paneled over with ¼ in. mahogany.

The rocker bottom side, to which the front pillar is stump tenoned framed, is secured to the rocker by screws, and the pillar brought home by screws from underneath. The pillar and bottom side are boxed down ¾ in. to throw the moulding of the body out at this part. The hind corner pillar, which is of an ogee curve, is both stump tenoned into the bottom side and the elbow, and secured as shown by Fig. 2. The elbow and pillar are half check framed and screwed, as at diagram Fig. 3. The bottom side is stump and lap framed, as at digram Fig. 4. Fig. 5 shows the side cant of the pillar and the half section width across top of pillars, and on the seat line, as at S S and P P, and the forging of the corner plate and cod pillar joint hinge, and width across the bottom and pillar at B B. The top back rail is stump tenoned into the elbow and top lapped, as in the diagram, Fig. 6.

The head on top is made to come well forward and of a depth to give a comfortable sitting room from the seat to the roof. The height of the head, on a horizontal line from the seat to the top of the back and front slats, is 42 in. The curve on the rise of the head is 5 in. A false back is fitted to the top back rail to give a comfortable back rest squab. In the trimming a depth over all of 23 in. gives a good rest to the back. The horizontal width of head is 49 in., as in Fig. I; depth of both, 16 in.; length of bracket, bottom side, 13 in.; length of bracket, 12 in.; depth of rocker in bracket, 1 in., which is boxed out of the solid; length of leg room, from bracket to seat, 24 in.; width of seat, 15 in., framed of English ash; length of rocker, 26 in.; depth of ditto over bottom side, 5 in.; full width of the back neck of the boot, 4½ in.; full width at the front neck of ditto, 4 in.; width of the top of the boot at the seat, 11 in.; length of body on hind bottom side, 22½ in.; length of quarter on elbow line, from corner of pillar to back rail, 25½ in.; depth of quarter at pillar, 13 in. over all; depth of quarter at extreme elbow point, 15 in.

Fig. 7 shows the body is plain, bottom up, projected in hind part from Fig. 8. From this section all the transverse widths can be obtained, and the forging of the body plate horizontally, which goes from the hind cross bar to the bracket, showing the cross foot flaps which take the arch cross bar and the hind cross bar, as shown in the plan. The widths of the body are: Across the top of pillars, 47 in.; across the back at the elbow points, 40 in.; across the bottom of the corner pillar at the back, 37 in.; across the boot at the bottom of arch panel, 35 in.; across the bracket bottom side at the arch panel, 30 in.; across the top of the bracket, 27½ in.; width of head across the cod points, 47 in.; width of the top of the back head slat at the wide corner, 41 in. The head props stand out 1 in. from the slats. The head joints are curved into the body props at the elbow points, the props projecting out from the elbow 2½ in. The body plate's position is shown on the body of chain lines, and horizontally in the plan Fig. F, 7.

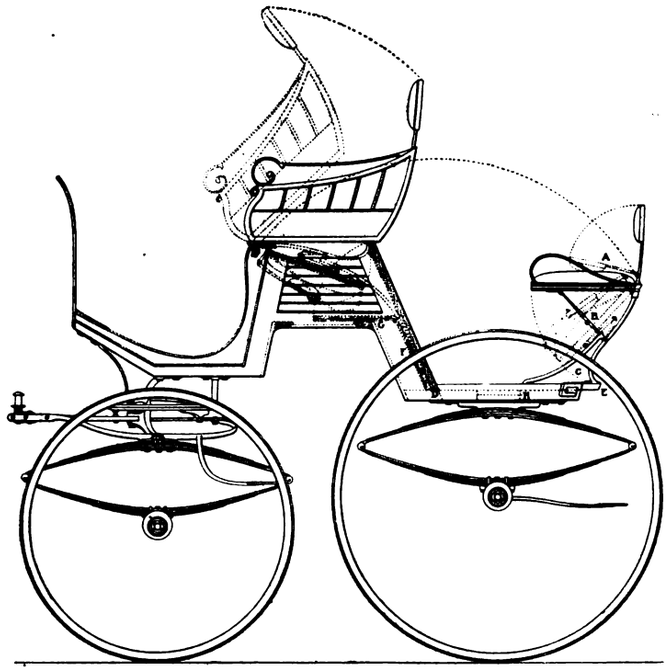
Fig. I shows the elevation of the body, Fig. 7, the plan and Fig. 8; the back half section in elevation, Fig. 5; the side plan of the pillar and half width section of the body across the pillars, diagrams Figs. 2, 3, A and 8 show the various framing pieces of the body.

SPIDER WITH A FOLDING RUMBLE.

THE outline drawing herewith shows the working of the folding rumble to the spider shown in Fashion Plate No. 518. The full dark lines show the rumble in position for occupancy and the principal seat down, as when in use. The dotted lines show the track of the various parts when folding the rumble. The first operation in folding down the rumble is to throw the principal seat forward to the position indicated by the dotted lines. The next operation is to unlock the section G which closes the hack under the seat when the rumble is in use, the stationary part being shown by F, while the hinged part, G, rests upon the frame over the wheel house. Next drop the rest back of the rumble A, then spring the joint B, and drop the seat frame cushion and rest back, as indicated by the dotted lines under the rumble seat bottom; secure these in place by leather securing straps; then lift section E, which hinges at D, and throw it forward until the folded rumble is under the main seat, the frame

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E, being paneled and finished on the under side, forms a full back panel under the front seat. Next let down the front seat and lock it in place, the same operation locking the frame E in place, entirely



SECTIONAL DRAWING OF DRIVING TRAP. (SEE ALSO FASHION PLATE NO. 518.)

hiding the rumble under the front seat, the whole operation being a simple one, and one that takes but a few moments to complete, the rumble when in either position being perfectly secure.

SOMETHING ABOUT IRONING BUGGY SHAFTS.

A SUBSCRIBER asks how to iron buggy shafts so as to prevent the iron breaking where the bar plate welds to the shaft plate, also to describe some method of ironing the bent portion of shafts back of the bar, which preserve them against bending when backing the buggy and protect them against breaking at bolt holes when a heavy strain is brought to bear at that portion of the shaft.



FIG. 1.

FIG. 2.



FIG. 3.

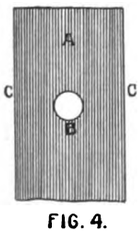


FIG. 4.

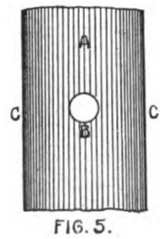


FIG. 5.

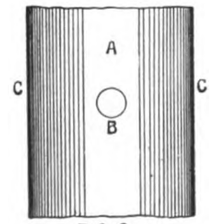


FIG. 6.

Another real good thing to know is how to prevent the heads of the heel bolts from drawing in the wood, and thus permitting the heel to split off, also to prevent the heads of the bolts from drawing in and the wood from splintering.

The average smith who has to do with shaft ironing probably has never studied up the matter technically and runs away with the idea that if the iron is thick, no matter if it be a trifle narrow, it is all right. Then again there are smiths that wouldn't give "a snap" for any other method than the one pursued by them. There is as much science and philosophy in ironing a pair of buggy shafts as there is in the ironing of brougham running gear—strength where it is required, blended with just harmony enough of appearance to make it seem pleasant and good to look upon. We all like to look at anything and everything that savors of beauty, strength and usefulness.

Fig. 1 presents a cross section of a shaft iron as usually made, which is narrow and just a little thick. Fig. 2 shows a cross section of a shaft iron after it has passed through the hands of the converted smith who is loath to give in, and meets the matter as he would an occasional acquaintance, "half way." B, the base; C, the edge, and A, the partly rounded top which has been slightly swaged. It is a trifle wider than Fig. 1, and a little thinner, but it is an improvement over Fig. 1.

Fig. 3 shows shaft iron as it should be. B, the base, or the portion coming in contact with the wood; C, the rounded portion, so formed by the swage, as is also the flat space A, the swage being so made as to leave the flat space A, so as to leave a good liberal surface for the nut of the shaft bolts to bear upon, leaving the main strength where most required and diminishing to the edge where the requirements of strength are at the minimum. Fig. A shows a flat section of the shaft iron as per Fig. 1; A, the flat surface; B, bolt hole; C, edges of the plate. We will say, for comparison's sake, that the iron is one inch wide and three-eighths of an inch thick. For a bolt one-quarter inch in diameter to pass through the iron, the hole ought to be one thirty-second larger than the bolt, which would place the hole at nine thirty-seconds of an inch only of solid iron, which is equally divided on each side of the hole. In most cases of this character the smith or finisher usually makes the hole five-sixteenths of an inch in diameter, which takes up nearly the third of the iron, thus leaving the space between the outer diameter of the hole and outer edge of the iron nearly the same as the bolt hole. Let us look

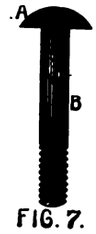


FIG. 7.

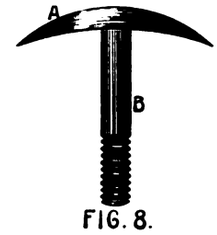


FIG. 8.

at the thing philosophically and say there is not iron enough. There may possibly be iron enough, but it is not properly distributed; consequently, it is not to be wondered at that the iron breaks at the bolt holes. Fig. 5 shows a flat section of a plate; B, bolt hole; C, edges of the shaft iron. Because of a trifle swaging, the iron is brought out on each side to make it measure 1⅛ in. wide, the mean center remaining about ⅜ in. thick. This limited amount, 1-16 in., on each side of the hole lends just a trifle more strength, but not enough to materially change the result. We, therefore, drop Fig. 5, and take up Fig. 6, which is the same as set forth in Fig. 3. A, flat section of plate; B, bolt hole; C, edges of the plate. By careful swaging, we have brought Fig. 6 out so that it measures 1½ in. where required, while it remains the original thickness at the center. There is, however, an increase of iron on each side of the bolt hole, that is, in width, which gives a greater bearing on the wood and lends strength to the iron at such points. Not disturbing the normal thickness of the iron at the center, adds materially to its strength at that point, and does not disturb the heating of the nut upon the plate. The swaging is continued on to near the ends of the shaft plate and bar plate, which are thinned down so as to give a finish. The heel por-

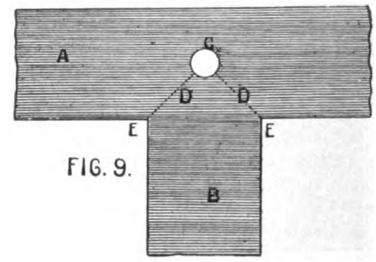


FIG. 9.

tion, as it nears the shaft iron head, is worked with a deeper swage to permit the retention of the normal thickness throughout the entire length of the heel.

When the heads are not more than 3 in. between, which means a very light wagon or buggy, 1 by 5-16 in. flat iron would be equal. Three in. between heads means a heavier wagon and necessitates stronger shafts, in which case use 1⅛ by 5-16 in.; for 3 ft. 4 in. between heads use 1¼ by 5-16 in.; for 3 ft. 5 in. and 3 ft. 6 in. between heads use 1¼ by ⅜ in.; for 3 ft. 7 in. and 3 ft. 8 in. between heads, 1⅜ by ⅜ in. iron. The fact is that it is only on rare occasions that shafts are made wider than 3 ft. 8 in. between heads; there is no necessity for any extension in that direction.

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The custom still prevails among carriage builders who do not and will not read books relative to carriage building of placing a bolt at the weakest point of the shaft, apparently for no other purpose than to invite fractures of the shaft and shaft iron at that particular point. See Fig. 9, A, section of shaft plate; B, section of bar plate; C, bolt hole; E, corners where the bar plate joins with the shaft plate. D shows where all shaft irons so constructed invariably break sooner or later. This point is the weakest, yet is made weaker by placing a hole at this particular point. The mortise in the shaft and the reduction of the bar by tenoning materially lessens the strength of bolt; the addition of a hole in the shaft iron decreases the strength still farther. The torsional and transverse strain at this point, in connection with its weakness as described, leaves no other action than fracture at D, Fig. 9. Some builders think that by

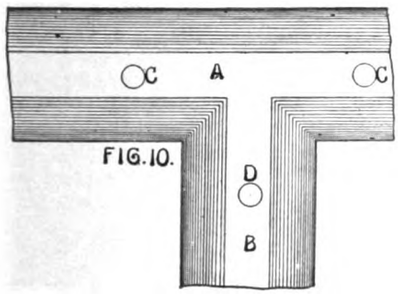


FIG. 10.

placing a thin T plate of iron on the top that they will prevent the trouble. All to no purpose, however; the weakness continues, and fracture gets there just the same.

Fig. 10 shows the correct method. A, the shaft plate; B, bar plate; C, holes in the section of shaft plate A; D, hole in bar section of bar plate B. By this method of construction the hinge pivot, as per C, Fig. 9, is knocked out. The holes C are brought near to the mortise in the shaft, say, 1 in., more or less, distant, just enough to not exert any influence on the mortise in the shaft. The hole D in the bar plate, B, is also placed about 1 in. away from the tenon shoulder of the bar. The three bolts, as per holes C and D, serve the same as a vise on the shaft at that point, and convert the weakest part into a part quite as strong and perhaps stronger than the rest.

Relative to the material to use for shaft irons, the writer has found that any good fair grade of American 80 per cent. magnetic iron fills the bill very well, such as Burden's best and similar brands, that permit of making good quick welds, where the bar plate welds to the shaft plate. It is well to mention just here that one of the best helps to the smith at this point is the cross swage. We say cross swage because we can use it either right or left, which cannot be done with the T swage. A good mild steel also makes good shaft plate. Fig. 7 shows the ordinary bolt; A, the head; B, the bolt section. The average ¼ in. bolt will measure ½ in. diameter at the head, and unless "reheaded" cold in a special tool it will cut the outer fibres of the wood of the shaft steel, unless the wood is extra tough and hard, and cause the splintering. The writer's remedy in all such cases is to use what are termed step or dash bolts for the heels by cutting off one-fourth of the diameter of the heels on two sides, as represented by Fig. 8; A, head portion; B, bolt portion. This kind of a head admits of lapping around the wood, latitudinally, and covers more wood longitudinally and in such a manner as to not disturb the fiber of the wood. Its—the heads—increased bearing presents the drawing in of the same, as is usually the case when the ordinary carriage bolt is employed. If you try to economize too much in the number of bolts on the heels, you do so at the expense of the shaft iron. Three to 3½ in. between bolts is better than 5 in. Along the flat portions a greater distance between bolts may be employed. One-quarter in. bolts are strong enough to use for all buggy and light phaeton shafts.

PIPES AND PIPE BENDING IN MOTOR SHOPS.

THE introduction of the automobile has resulted in the call for additional workmen and work shops for effecting repairs on the piping and general mechanism of the machines, which finds its way into wagon construction and repair shops, and considerable business is being done in this line. Many of the carriage smiths are doing an excellent business. Some of them have put in the necessary equipments for carrying on the work in a first-class fashion, while others are not so readily supplied with machinery, and are obliged to struggle along with what apparatus they possess. However, all are aided

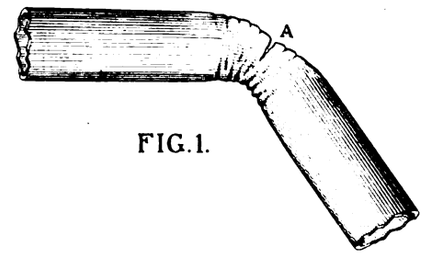


FIG. 1.

by combining automobile repair and construction with the regular business as to the piping of the automobiles; this depends, of course, upon the style of the machine. In any event, there are the same rules to follow. In Fig. 1 we give a sample of the way in which some of the pipes are fractured while an attempt is being made to effect a curve in shops where the workmen are not furnished with the necessary fittings for pipe bending. Some try to overcome the liability of the pipe breaking as shown by loading the pipe with rosin, clay and sometimes molten lead or other soft metals, which are melted out after the pipe is bent. The filling serves to sustain the walls of the pipe and prevents the depression at the bends. It is chiefly in cases where the pipe is bent in its original condition that the parts are broken at A. In Fig. 2, an illustration is given of a pipe bending device which is being used in automobile shops. The contrivance can be easily made. There is a base piece, usually made of hard wood, about 4 inches thick, so as to be very strong and weighty. On this

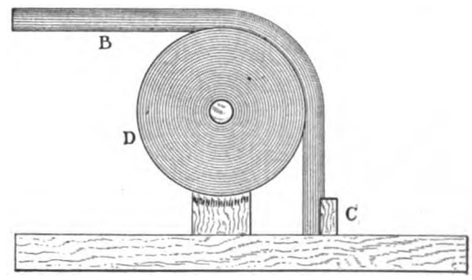


FIG. 2

piece an upright of wood is fitted for carrying the wheel D. This wheel is best made of iron, but I have seen them made from hard wood. The wheel is grooved for receiving the average size of pipe handled. A pin is inserted at C. The pipe to be bent is put back of the pin C, and the pipe slowly bent over the wheel by pressure, the loop assuming the position as at B when bent.

The mode followed in automobile repair shops for bending piping in vises is very crude. In Fig. 3 is an illustration of the plan used in some places. The pipe is merely inserted into the jaws of the vise, and the latter are closed upon it, often ruining the walls of the pipe by the pressure exerted. Then someone attempts to get the proper curve to the pipe by bending the end down, using bars and

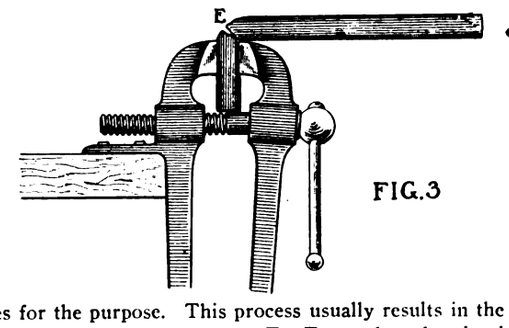


FIG. 3

wrenches for the purpose. This process usually results in the breaking off of the end of the pipe, as at E. Even when the pipe is filled, beakage often happens, and the pipe is spoiled and must be renewed. I know of several cases in which repairmen tried to effect a bend in a section of piping removed from the automobile tankage for the purpose, and spoiled the pipe by breaking it in the jaws of a vise.

All shops that cater to the automobile trade should be furnished with a little wood device like that presented in Fig. 4, in which a pipe, G, is shown in process of being bent in a cavity cut into the solid hard wood block at F. The workman should at first choose the proper sort of wood. The grain should be even and close. The

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block should be about three times the size of the jaws of the vise, and the vise should be of liberal proportions, about the same as the average workshop bench vise. After the block of wood is selected, the tapered holes from either side should be cut out by boring and chipping. The opening to be wide at each side, gradually decreasing toward the center of the block, at which point the diameter of the hole is but little larger than the pipe itself. The pipe to be bent can be placed in this hole and readily forced to any desired curve, by exerting the required force. Pipes are bent both filled and unfilled and hot and cold by this plan. The custom is to place the block in the jaws of the vise for service, but I have seen some of these blocks bolted to the ends of stands on benches.

Often it is necessary to do some piecing up work on the pipes of automobiles, for the reason that it is frequently difficult to procure a duplicate of the fractured portion. Besides the breakages which occur, there are the waters, oils and gases which are constantly

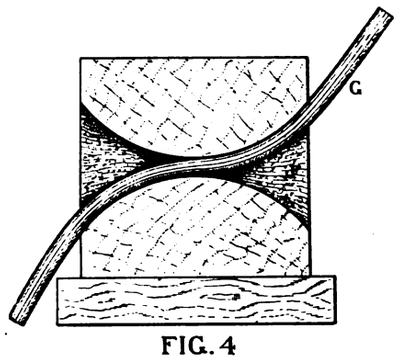


FIG. 4

weakening the pipes. There are many steam automobiles in service, but the writer has met with few in which the organic matter in the water used for steam raising has not eaten into the pipe metal and destroyed connections, etc. In the gas machines, frequently a defective original union will develop a leak after the machine has been in use for a few months. Then in the oil machines, the odor which it is so desirous to prevent, and the leaking of small quantities of oil, are often found to be due to small fractures or places where the metal has been eaten into and rendered so thin that the oils can ooze through. Thinned places as well as direct fractures

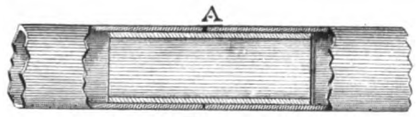


FIG. 5

can be repaired and are often, by means of the insertion of a sleeve, as in Fig. 5, which is a sectional drawing. The first thing to do is to remove the joint of pipe from the machine, so that it can be gotten at readily. Then the interior of the pipe is cleaned and smoothed, so as to receive the sleeve or interior connecting piece. If the pipe is fractured, as at A, in the cut, then this sleeve should be inserted with the middle over the fracture. If the pipe is thinned for quite a length, then a length piece of sleeving will be needed, large enough to cover and protect the entire portion of thin metal. A pipe which has a tendency to spring readily is often stiffened in this way. The reduction of the passage in diameter by the use of an intersection seldom amounts to enough to effect the flow of the contents of the pipe and no harm results from this mode of repair. If the piece is fitted to the outside, it is liable to be struck at times and loosened

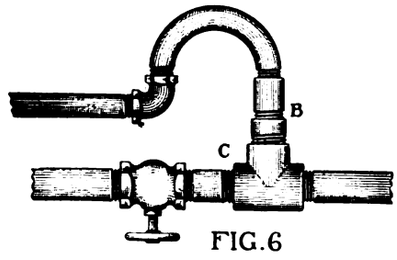


FIG. 6

besides. The series of patchings of this kind would make the machine appear as if repaired frequently.

Automobile repairmen are compelled to do considerable inspecting of the jointing of small pipes and connections, owing to the weakness of some of them and to the tendency of some to leak. In Fig. 6 is shown a common pattern of pipe connection used in some of the oil machines. These patterns often start to leak soon after the machine is in service, and the points most liable to the trouble are indicated at C and D. At C, where the pipe enters the union, the strain ap-

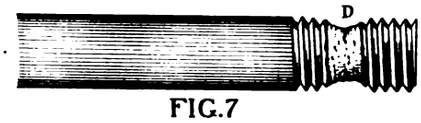


FIG. 7

pears to be greater than at the other joints in the pipe and the mechanical motion, combined with the action of the oils, soon develops a leak. Some of the types of oils employed in the oil machines contain foreign matters, which are exceedingly detrimental to pipe unions. I have seen instances in which the acids in the oils have entirely ruined threaded joints, making it necessary for the substitution of new pieces. Only a small proportion of the oils are thus affected. The cheaper oils are more likely to contain injurious foreign substances, same as some waters contain soda, salts, or other organic matters. At D, Fig. 6, is another point where weakness develops readily, and this point should be closely inspected. The renewal of the threading, and if necessary the extension of the pipe by putting in a longer section, will do away with much of the trouble liable to follow an imperfection here. Good, full, deep and substantial threads cut in the pipes and unions will do much toward overcoming weaknesses at, B, these points, providing that the threads match well. I have found in some of the connections cases in which the threads do not correspond well, resulting in not only weak joints, but in leaky ones. There is only one way to overcome the difficulty, and that consists in substituting new portions for the bad ones. In

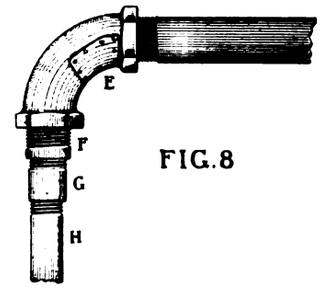


FIG. 8

Fig. 7 is shown a case of one of the pipe connections which came to notice not long ago. Foreign matter had accumulated on the threads in the middle of the union, and the organic substances in course of time ate into the metal to a depth slightly beyond the thickness of the pipe wall, so that at D the interior was reached. As these weakness extended completely around the pipe, the section

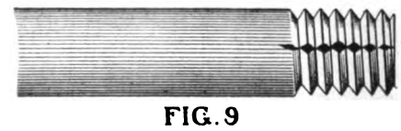


FIG. 9

of the threaded portion beyond the weak place was rendered useless, and after a time was almost completely severed. Thus there remained but four threads to hold the joint together, and as these gradually worked loose under the strain, leakage resulted which was not detected for a long time, during which the odors from the escaping oils were very annoying to the owners of the carriage.

Patching of piping on automobiles hardly pays, although there are occasions when it has to be resorted to, as in Fig. 8. Here a slight pin hole occurred in the turn, and as this turn was good otherwise, no perceptible harm resulted from the putting on of the patch E. But before this patch was riveted on, the pin hole was plugged with soft metal. In pipes of this kind, where a series of reducers are used, like F, G, and H, a careful inspection of the threads of each reducer should be given regularly. The strain of a form of this sort on the smaller sections of piping is very severe, and braces should be used wherever possible. As soon as the smaller pieces begin to spring and twist under the work of the machine, leakage will surely result unless the parts are well braced. In Fig. 9, we show a sample of leakage often seen, due to the action of foreign substances which have worked their way the full length of the thread system. This is shown by I. Often the threads of the mated part are correspondingly grooved, so that we have a line of passage way through the joint, which develops leakage.

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VARNISH ROOM PROBLEMS.

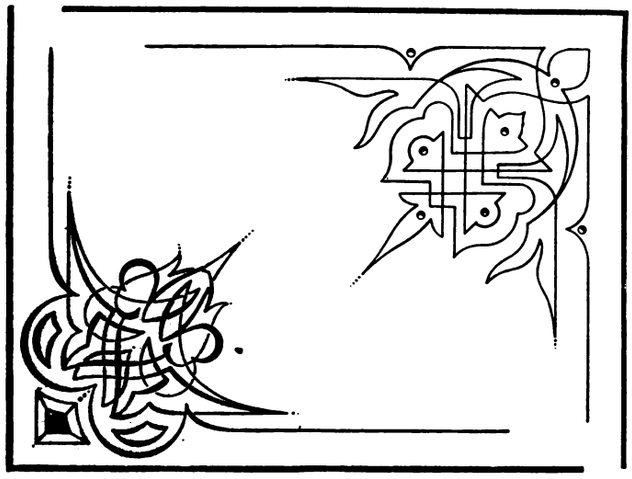
THE painter who can successfully engineer the varnish room of the average country paint shop through a hard winter is well equipped to play at almost any game alternating from paints to politics. The hardest proposition of all is the heating apparatus. The varnish room store, to address it in the mildest possible terms, is an abomination. It is a sure thing only when the fire is drawn and a chill is creeping through it. The matters of ventilation and cleanliness are serious enough, but they are more nearly under the painter's control than the shop store which "blows hot and blows cold" as its digestive organs are made to do duty. The store, at its best, is the greatest drawback in the varnish room, excepting, of course, the varnisher who doesn't know his business. Happy, then, the finisher who finds himself located in the steam or furnace heated varnish room.

But the finisher who must suffer the continued affliction of the varnish room store need not wholly despair. Much may be done to soften the hard lines of fate and make the store endurable. The store should be well fed and well groomed and given a chance to breathe free and burn coal. And all these little attentions should be lavished upon it early in the day, and well in advance of the varnishing operation. The store should be a good heater and large enough to carry sufficient coal to insure the required heat. Not a few painters in straining after economy swallow an able bodied loss. They keep the store at a middle ratio of heat when the maximum degree should be maintained. They recognize the urgency of a high and uniform degree of temperature, but become unduly alarmed at the contemplated size of the coal bill; and between these two situations is room for a most unhappy state of mind.

The store question grows in importance when it is remembered that for at least nine months in the year it is more or less actively employed. The mere advent of the warm weather, as determined by the almanac, does not indicate that the store can be dispensed with for the season. The chill days of early summer and the moist humid days of the hottest month in the year, necessitate the presence of store heat in the varnish room. Hot, moist air is as destructive to varnish, and as injurious to its working property, as cold air, and the store must be allowed to control both.

ADDING DRIERS TO VARNISH.

OCCASIONALLY one hears the suggestion advanced that to hasten the drying of a varnish applied in a cold room, or in what the factory finisher would call a cold room, driers should be added. This is the worst possible 20th century advice and belongs properly to the history of the ancient days. Varnish and driers, as the painter unites them, form a combination that causes a vivid style of pin-holing and pitting. Varnish and driers do not amalgamate and become one material through the medium of shop mixing. To prove this mix a small quantity of high class varnish with, say, one-tenth part of japan drier, and after shaking vigorously set aside to settle, and

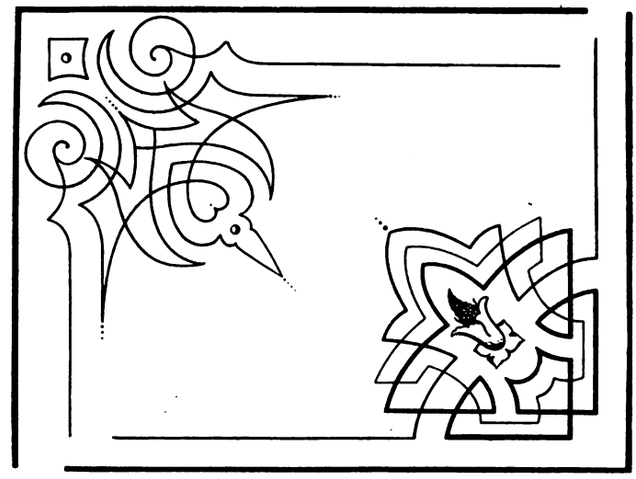


CORNER ORNAMENTS.

then in due time apply to a specially prepared panel. If this can be done, then we are in the position of the defeated candidate.

When we advise against the practice of adding driers to finishing varnish to hasten a result which other more dependable agencies can be counted upon to bring about, we speak the experience of a vast army of finishers. In the manufacture of varnish the varnish maker is to-day paying for the best experience and the best material and the best equipment money will buy. Why expect the painter to improve upon the science of the varnish maker?

The finisher who juggles varnish, who adds japan to dry it, turpentine to thin it, and still other makes and grades to make it meet a mission it is not intended for, is an unsafe mechanic, to use plain unvarnished speech, to turn loose in the carriage paint shop.



CORNER ORNAMENTS.

Rather than attempt to attain certain results through the medium of a varnish admixture, why not buy varnish adapted for a specific purpose? This system is fully as economical, from a financial viewpoint, as the other, and leagues beyond it in point of reliability.

The mixing of an inferior grade of varnish with a better grade as a means of bringing the poor up to the standard of the good is only another way of imitating the practice of the dishonest groceryman who conducts a sand bank under the label of granulated sugar. The inferior is sure to degrade the good, to bring it down to the lower level. Mixing varnish is an uncertain practice. It belongs to an earlier day and has no place in the economy of modern painting.

THE PENNSYLVANIA LINSEED OIL LAW.

THE following act, duly passed by the Legislature, received the Governor's signature on April 23, 1901:

AN ACT.

An act to prevent the adulteration of and deception in the sale of linseed or flaxseed oil.

SECTION 1. Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met and it is hereby enacted by the authority of the same, That no person, firm or corporation, shall manufacture or mix for sale, sell or offer for sale, under the name of raw linseed oil any article which is not wholly the product of commercially pure linseed or flaxseed. Nor shall any person, firm or corporation, manufacture or mix for sale, sell or offer for sale, under the name of boiled linseed oil any article unless the oil from said article is made by wholly the product of commercially pure linseed or flaxseed, and unless the same has been heated to at least 225 degrees Fahr.

SEC. 2. Nothing in this act shall be construed as prohibiting the sale and manufacture of any compound of linseed or flaxseed oil, provided that such compound if it imitates in appearance and is designed to take the place of linseed or flaxseed oil, shall not be manufactured or mixed for sale, sold or offered for sale, under the name or description containing the words "linseed oil" or "flaxseed oil."

SEC. 3. Any person, firm or corporation, who shall violate any of the provisions of this act shall be guilty of a misdemeanor and upon conviction thereof, shall be punished for each and every such violation with a fine of not less than $50 nor more than $500, and in default of the payment of such fine shall be committed to the county jail for a period of not less than thirty days.

SEC. 4. It shall be the duty of the Commissioner of Agriculture to enforce the provisions of this act. The said commissioner and his assistants, experts and chemists and others appointed by him, shall have access, ingress and egress to and from all places of business

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and buildings where linseed or flaxseed oil is kept for sale or stored. They shall also have the power and authority to open any tank, barrel, can or any other vessel containing such oil and may inspect the contents thereof and take samples therefrom for analysis.

SEC. 5. Any person, firm or corporation, who shall violate any of the provisions of this act shall in addition to the fines herein previously described, for each offense forfeit and pay a fixed penalty of $100. Such penalty shall be recovered with costs in any court of the United States having jurisdiction thereof in an action to be prosecuted in the name of the people by the Commissioner of Agriculture or by any of his assistants, and shall be devoted to the payment of the expenses of the department of said Commissioner. In any action commenced in the Supreme Court for the recovery of such penalties, an application may be made on the part of the plaintiff to said court or justice thereof for an injunction to restrain the defendant, his agents, servants and employees from the further violation of this act during the pendency of the action, and it shall be the duty of such court or justice to grant the injunction in the same manner as injunctions are usually granted under the rules and practice of such court upon proof of affidavite that the defendant has been guilty of such violation, either before or after the commencement of the action. In case the plaintiff shall recover judgment for the penalty or penalties demanded in the complaint, the judgment shall contain a permanent injunction restraining the defendant, his agents, servants and employees from any further violation of the section or sections on which the recovery is obtained.

SEC. 6. This act shall take effect immediately.

TO TRIM A PARK PHAETON.

IN Fig. 1 we show the general outlines of the completed job, thus giving a very comprehensive idea of the body trimming at one glance. The lazy backs we have shown in the prospective is only 7 in. deep, but for this particular style of trimming it might be preferable to add about 2 in. to the depth, and also narrow up the space between the

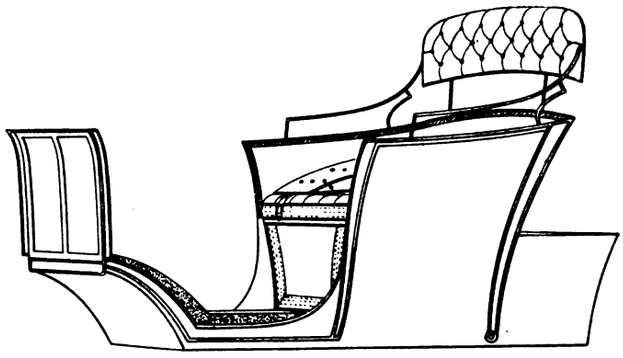


FIG. 1. PARK PHAETON.

seat back and lazy back the same amount. To trim the lazy back (Fig. 2) cut a cardboard the required size and lay off as shown, avoid giving the goods too much fullness and punch along the bottom at the line of fullness, and add enough goods to extend around the backside. Tack and stitch the plaits for the diamonds, but not around the edges, line with wadding and button to the board. Plait up temporarily on the front side and secure by tacks, having placed between the bottom edge and the bottom row, an iron, upon which to clinch the tacks; turn over and tack down the plait. Stuff up on the back

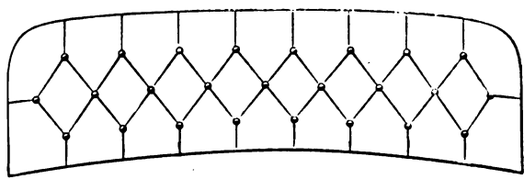


FIG. 2. LAZY BACK.

and in the ordinary manner. Secure along the bottom with a tack at each plait and under the same finish with coach seaming and pasting lace. If not too particular the welt and lace can be gimped under the corners at the ends and cut off ½ inch at the turn; but, to have it right, tack the welt and lace over the top and ends and paste down the plait well, leaving enough of the welt and pasting to extend to one of the standards from either way. Turn the job over, allowing it to rest upon a box or horse and finish welting all around, would be right, but a little more stock and labor would be required.

To trim the side and back of seat, fit the goods and seam up, at the corners, with a lap seam lapped toward the front at each side, and if the job is built with thin panels, blind tack the trimming at the bottom. Put in a foundation of double buckram or cardboard at the ends and rear, and tack down to the top rail and strainers, also secure at the corner pillars; put in two ply of wadding folded down to the cushion top and add two more, making six above the cushion; draw the goods up; finish as shown in Fig. 1.

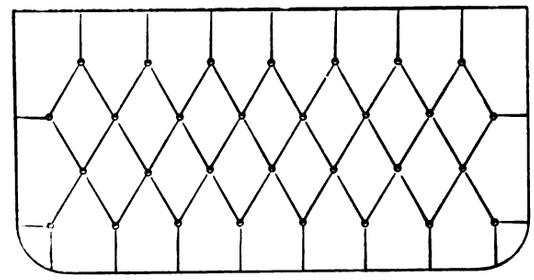


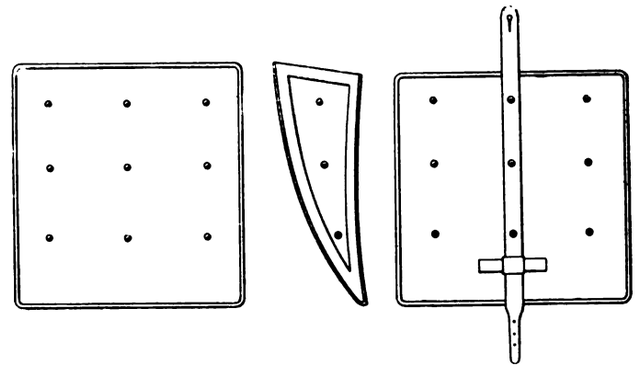
FIG. 3. CUSHION.

Make up the cushion (Fig. 3) as follows: Get the bottom out of enamelled duck, the interlining out of pebble drill and lay out as shown, leaving a margin wide enough to tack to a frame. Stitch the diamonds, line with wadding and plait upon the machine, leaving the back open; squab and trim off.

The front facing is of 2½ in. broad lace on to a foundation of duck canvas, or enamelled duck well shrunk may be used; cut the ends and rear facings from enamelled duck and cover with the goods.

The fall, which is made of enamelled duck, has a wide stiffness of dark leather to back up the broad lace, which should be carefully mitred and kept in place with 6 oz. lace tacks, and has one of wadding in the panel. If the goods is broadcloth the fold should be pressed out carefully. The job should be stuffed throughout with best hair.

The fall, which is tacked to the front of the job and is finished with full stick as shown. For a finish of this kind the job should have a regular ¾ in. seat bottom, and the front should be swelled ½ or ¾ in. with a uniform curve. The fall stick should be 1⅛ by ⅜, half oval, out of birch or ash, sticking in a piece of ¾-in. dash stick out of white wood is all wrong.. Put a ⅜ by ⅝ oval iron into the fall, then it will stay in place.



FIGS. 4 AND 5. PARTITION AND END. FIG. 6. BOTTOM STRAP.

To make up the driver's cushion, get out the foundation, 16 in. wide and deep enough to extend from the rear welt to a point 1 in. back of the front welt. Lay off, as shown, giving enough fullness at the sides and rear to form a light roll. Cut out the fullness instead of plaiting it out, unless leather is used when it should be plaited out. The partition is laid out, as shown in Fig. 4, and the ends, as shown in Fig. 5. The bottom has a strap, as shown in Fig. 6. The facings are placed on to enamelled duck and have a dark leather stiffness and should have a seam stitched on the end and rear facing, as shown. The foot-rest to have a carpet and moleskin sides.

IT is not the business that elevates the man, but the man who elevates the business.

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THE PRODUCTION OF HIGH GRADE CARRIAGES ONCE MORE.

REPLY TO THE "CARRIAGE MONTHLY'S" INVECTIVE.

THE policy of THE HUB is to refrain from all personalities, being conscious of the fact that few readers pay attention to personal differences between journalists, but to fearlessly advocate or condemn any and all questions of importance that have an influence on the carriage industry. Nor would we now depart from that position were it not that the question that led to the controversy is of vital importance to the export carriage industry. In recent issues of THE HUB we took the opportunity to defend the carriage trade of the United States against what we have heretofore believed to be an assault upon the character of American carriages, through a misconception of the facts, on the part of the *Carriage Monthly,* but which now, on reading the acrimonious editorial in the July number of that journal, we believe to have been the effervescence of a smatterer who wrote to fill space, without troubling himself as to the import, or truth of what he said. Our only motive in noticing the article in the April monthly was to do what we could to rectify a wrong. Nor did we enter the task unadvisedly. We consulted well known and highly respectable manufacturers, who had been long connected with the carriage industry. They felt as we did that an uncontroverted statement, such as that made by the *Monthly,* would be productive of much ill and, in justice to the great interest which THE HUB represents, we denounced the statement as the most damaging ever published in connection with the carriage building, a statement that we reiterate to-day in the most emphatic manner. The many letters published in July HUB and in this month's issue, further confirm our position. But our contemporary instead of trying to undo a wrong has seen fit in the attempt to defend itself to resort to personalities that have no bearing on the question at issue, and his language clearly proves the weakness of his cause and illustrates how apropos the quotation that "want of decency is a want of sense." How his little nature must have revelled, while like a jumping jack he went through the glossary and selected such phrases and words as "lashing itself into a fine frenzy," "perturbed spirit," "yellow journalism," "mental therapeutics," "mental astigmatism," "mental short-sightedness," "little tin tomahawk," "mental blindness," "gray matter in a normal human brain," "wilful perversion of facts," "man of straw," "tirades born of ignorance and folly." Then he ventilates a little of his Latin—*"ad uno disce omnes"*—as a foil perhaps to his slang. He does not wholly place us out of his list of imbeciles, for he says of us that we are "in many respects reputable and in some minor respects well informed." Now isn't that kind? We might feel inclined to accept this as a compliment were it not a part of a most puerile effusion, and evidently an attempt at sarcasm. In its efforts to explain the article in question the *Carriage Monthly* reprints a paragraph in which it undertook to qualify the original opening paragraphs, but entirely omitted the cardinal assertion, which was:

"A correspondent calls our attention to the fact that the number of what are called fine, or high grade, carriages now being built, is much smaller than it was a quarter of a century ago. He means not smaller in proportion to the population, but actually smaller in enumeration. Undoubtedly he is correct. How shall it be known that he is correct, and what is the explanation of the fact?"

This is followed by a silly reference to the falling off in exhibits at international exhibitions, as though that proved anything, closing the paragraph by saying, "Judged by this rule, it is apparent that there has been a steady diminution of fine vehicle building in France, England and the United States from 1876 until now." Here follows the paragraph republished by the *Monthly* with the following part omitted: "At the same time it must be remembered that since the rise of the trolley system, with its luxuriously equipped cars (hanging straps?) and its astonishing speed, many a man, who formerly kept a carriage of his own, finds it more convenient and less expensive to travel by street railways, and if he wants to enjoy a carriage ride with his family he can send to the nearest livery stable with far less trouble than he could maintain a private establishment. This, then, is the solution of the problem so far as the United States is concerned."

He says in the July number "Our explanation was that *wholesale carriage builders had brought this work to such perfection that it has largely displaced hand made work of 1876."* (The italics are his.) Does this explain what he said in April? *"They* (wholesale factories) *began to improve their work.* They have steadily continued to improve it until now, when it may be fairly said that many factories which produce vehicles in a wholesale way, turn out what may be considered *fine work,* in the sense that it is *good work,* and well worth the money charged for it, though it is *not what, prior to the Centennial Exhibition, was considered work of high grade.* (Here, too, the italics are his.) He is careful to say that he "did not use the phrase 'hand-made' because at that time there were *no carriages made in any other way."* (Here once more the italics are his.) If the editor means that no machinery was used in carriage making prior to 1876, he only shows his dense ignorance of the industry as it was anterior to that time. The head knife, or milling tool, for dressing up straight and crooked timber was used as far back as 1857, as we know by personal experience. Planing and sawing machines date so far back that they need no mention. Lathes, drills and other machinery were in all good shops. Wheels were made by the aid of machines then as now, and some of the best known wheel manufacturers of today made their reputation for first class work long anterior to 1876, all of whom depended largely upon machinery. Great improvements have been made in machinery, and are being made, largely in the greater perfection and increased speed. The heavy body of today is as much a hand made job as was that of fifty years ago, except that machines are doing the heavy work of dressing stock, and there is no such thing as a machine made carriage today, except in the preparatory work. The skilled worker at the bench or forge must complete the task. But why waste time and space by attempting to notice all his incongruities?

He says "Editorial writers generally assume that their readers are fairly intelligent and tolerably well informed," etc. Admit it, but has not the reader the right to expect that the editorial writer, at least on technical matters, knows something about what he is writing of? And has the ignorant editorial writer the right to expect his readers to understand what he himself is unable to explain and then shield himself behind the excuse that it is not "necessary to explain at length every historical reference?"

Mistakes occur, but it is far more honorable to correct them than to resort to Billingsgate to defend them. It would have been far better to have expressed regret, as did one of the *Carriage Monthly's* staff who asserted it was the worst break ever made by the *Monthly,* than to have backed up the assault upon the American carriage by a personal attack upon THE HUB that could find its level only in the most disreputable journal of the present day. The entire tirade gives increased force to the assertion that "nothing is more terrible than active ignorance," while it in no way mitigates the injury that may arise from the ill-advised attack upon the character of the American carriage.

ADDITIONAL LETTERS.

IN July HUB we published a series of letters which were so exhaustive as regards the question of the production of fine carriages that no further evidence would seem necessary to sustain THE HUB's claim of an increase rather than a decrease, and we could let the matter rest where it is without further comment were it not that it would be unfair to those whose answers were received too late for the July issue. These we publish herewith, but unlike the *Monthly* we publish the names and addresses of our correspondents:

AMESBURY, MASS., June 20, 1901.

Editor of THE HUB:

Dear Sir—Replying to your favor of the 10th, regarding quality of American vehicles, beg to say that it is our opinion that the trade is steadily demanding better vehicles, and we think there are more fine carriages built to-day than ever before. We think, however, there is a decrease of the old time, high grade work, when everything must be hammered out by hand, for the fact that improved machinery has been introduced into the carriage business, and has been proved that a better job can be built for much less money than the old time way. Consequently such high priced vehicles are a thing of the past and equally as good ones have taken their place at a much less price.

We think all carriage manufacturers are of the same opinion.

Yours truly,

OSGOOD MORRILL.
B. H. W.

AMESBURY, MASS., June 20, 1901.

Editor of THE HUB:

Dear Sir—Replying to your favor regarding the decline of fine carriages in the United States and elsewhere, will say that we would hardly care to pass an opinion without giving the matter some study.

Speaking for ourselves we can say that the grade of work put out at the present time is vastly improved over what it was several years ago. We are not only building vehicles of much higher grade, but about half of our output is coach gear work which previous to five years ago we did not build.

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In Amesbury there has been a marked increase in the production and sale of high grade vehicles, while the manufacture of cheap carriages is entirely eliminated.

Yours truly,

C. N. Dennett & Co.

Auburn, Ind., June 15, 1901.

Editor of The Hub:

Dear Sir—We note your circular of June 10 and also the printed extract from the *Carriage Monthly* on the subject of the amount of high grade vehicles built to-day and the question whether this industry shows an increase or a decrease.

We do not feel that we are in position to answer this question, not having statistics that will enable us to warrant any conclusion. Again, we do not seem to be able to arrive at a starting point or dividing line between cheap work and high priced work. There is no doubt a difference, but if you had designated a starting point or point of division under which finished vehicles could be divided the matter might have been solved with some accuracy.

Not many years ago the builders of fine or high grade work could be enumerated on the fingers of one hand, but to-day this is not possible, as builders of fine vehicles have become so much more numerous, and the name and position occupied by Brewster and a few others can now be filled with as great credit by more than a score.

Respectfully,

W. H. McIntyre, President.

Columbus, O., June 26, 1901.

Editor of The Hub:

Dear Sir—Answering your favor of the 10th as to the decrease in the number of high grade vehicles built, we presume the article referred to meant to say that there was a decrease in the highest grade, such as made by Brewster, Healey, etc. We have no personal knowledge of their business, except, when the writer was down in New York last fall, he noticed that Brewster & Co. had just made quite a big addition to their factory, and from conversation with them as well as some of the other builders, he would take it that they were doing more business than they had ever done before.

We do not think that the number of jobs shown at an exposition would be a guide to go by as to product. This thing of having work at exposition is a business proposition simply, and there are a great many reasons why a firm would not exhibit. We understand that there are very few carriages exhibited at Buffalo, though we believe that there are a great many more carriages of all grades being built to-day than in '93 during the World's Fair at Chicago.

We believe there were within the last two years a great many more high grade factory vehicles sold than at any other time in the history of the business, and while the small custom builders outside of the large cities have limited their product, the high grade builders have increased theirs, and their product is equal or superior to the grades produced by the smaller custom builders. We think the writer of the article referred to is altogether wrong in drawing such conclusions from the number of vehicles exhibited. We should imagine that the reason there were not more vehicles exhibited at Paris by American factories is that the American manufacturers did not consider it a good proposition, did not feel that the benefit would be equal to the expense, and not on account of a decreased production.

Very truly,

Buckeye Buggy Co.,
Per C. E. Jackson, manager.

Cincinnati, O., June 26, 1901.

Editor of The Hub:

Dear Sir—Yours of June 10th, with reprint of article from a contemporary journal of April, 1901, received.

The question, to be answered correctly, would naturally lead to asking whether he means in fine carriages of high grade, built entirely by hand, or built by machinery in part. The old fashioned way of building carriages, of twenty-five to forty years ago, when nearly everything was turned out by hand, has probably diminished. Large factories, turning out large numbers by the use of machinery as far as possible, have produced fine high grade carriages, and these are in very much greater use now in America than they were twenty-five years ago.

The manufacture of a very large number of low price vehicles commenced in the early seventies was a missionary which went all over the country, and where there was one high grade vehicle sold in our Western and Southern States before that time there is now from ten to a dozen, as the tendency of the Americvan citizen is to want better goods continually.

Answering your questions in another way—the manufacture of low priced vehicles, for a time, did interfere with the sale of high grade vehicles. The introduction of the bicycle and the hard times interfered again with it, but taking the series of years from 1875 to the present time there has been, and is produced to-day, a very much larger number of high grade, fine vehicles than there was twenty-five years ago in the United States.

Yours truly,

Louis Emerson.

Cincinnati, O., June 24, 1901.

Editor of The Hub:

Dear Sir—Yours of the 10th inst. received, in regard to article "The Decline in Fine Carriages in United States and Elsewhere." From 1893 to 1898 this country experienced a business depression and all kinds of business suffered, luxuries in particular. It would be an injustice to any one line of luxuries, as compared with others, to say that this constituted a decline in the manufacturing of such goods.

So far as our own experience goes, the demand for better grades has been on a steady increase for several years past, and most noticeable this year. Like many other lines of trade, the carriage business has undergone a change in methods of manufacturing and selling—the latter in particular. Thirty years ago the carriage business was of not enough importance in this country to have their own exhibitions "of importance," and manufacturers sold largely direct, consequently the carriage manufacturers took more part in general exhibitions, but to day, and fo more than a decade past, carriage manufacturers have lost interest in exhibitions of general products, because the carriage business is of such immense proportions as to profitably afford special exhibitions for the carriage manufacturers alone, and on a scale that is a flat contradiction of "The Decline in Fine Carriages in United States and Elsewhere." We need good roads, and this will further increase the demand for high grade work.

Yours truly,

Sayers & Scovill,
Per Jos. P. Cranston.

Dayton, O., June 19, 1901.

Editor of The Hub:

Dear Sir—The question, "Has the number of fine carriages decreased?" is a very difficult question to answer off hand, or in a single sentence, because the answer first involves the question, "What is a fine carriage?"

Does this mean heavy work, light work, track work, or what might be called the Stanhope, runabout and depot family work?

Before the "Centennial," each city, town and county seat had its local "Brewster"; that is, a carriage maker who made at that time the finest work on the market, or rather, on his market. He made buggies and carriages for the better and middle-class people, as well as the opulent famer. The high-class buyer who was not satisfied with the "first-class work" made in his own locality, went to the next larger town or city for his fine work. The less opulent townsman and farmer contented themselves with the second-hand or cast-off work of the rich city or town men, while the livery stable man, to a large extent, in his heavy work used the second-hand city carriages.

The question is further complicated by the fact that since 1876 the "Centennial" year referred to, the county seat first-class carriage maker has disappeared as a factor in his locality, for either high class or cheap work, and his former fine goods are now furnished by the high grade wholesale people, and the less expensive are made by the wholesale cheap maker.

The cheaper wholesale manufacturer has reduced the cost of a carriage to a popular price, so that everybody now owns some kind of a pleasure vehicle, leaving a much lesser number of users of light family high grade goods, in proportion only to the whole number made; but in this connection it must not be forgotten that the total number of pleasure vehicles now made is probably ten to twenty times as great as was made previous to 1876, and the fine carriage undoubtedly shares its percentage of the increase of population and the increased general prosperity of the country.

In forming some adequate and intelligent conception of the matter the entire number of carriages annually produced should be considered. This number, cheap, low, medium and high class, now reaches nearly the one million mark yearly. The proportion of these vehicles produced, if it could be arrived at definitely, would answer the original question conclusively. But from close observation it is reasonable enough to say that from 75 to 80 per cent. of this number are what is known as cheap or low mediumwork.

Probably two-thirds of the remaining per cent. would come under the head of high medium and high grade, light family vehicles, such as phaetons, stanhopes, station wagons, buggies, runabouts, sea shore and suburban varieties, which are to-day far superior in variety, style, material, workmanship and finish than was made by the local county town or small city maker, of what he called fine goods previous to 1876.

The makers of high grade work, such as coupés, landaus, and the track family of vehicles, would probably consume the remaining per cent. out of the 100 per cent. produced. That the number of these high grade carriages have increased, it is only necessary to note the growth of the larger and medium size towns, all of which take pride in having the latest and best variety and quality, both in light and heavy vehicles, and the wonderful growth of wealth in the country takes with it the demand for luxury, and the carriage maker has no surer customer than the prosperous family, whose first ambition is to set up a carriage, whether a $150 buggy or a $1,500 Victoria.

The enterprising livery man and undertaker only but follows the local demand, which forces him in having his so-called funeral hacks, which nearly always consist of a falling top landau, which can be used for hire, for funeral, as well as festive occasions, of the highest finish, and a hearse in the middle west not provided with rubber tire stamps the town as a back number. It can readily be seen that the demand for this class of work has increased very largely by the natural growth of the country and the modern demands for handsome turnouts for private use, and for the occasions referred to.

These statements, which are apparent to anyone who looks or thinks, show conclusively that the use of fine carriages are very materially increased, and they are now made in very much larger numbers than before 1876, but by an entirely different system and by different people.

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The argument that the trolley car competes with the carriage to any material extent is folly. The chief use of the trolley in most cities, and, in fact, in all cities, is that it tends to develop the suburbs. There are hundreds of square miles of suburban points that never would have been built, had it not been for the trolley, or some kind of a rapid transit, and the best illustration of this is the great growth of that portion of New York known as Harlem, which was only made possible by the elevated road, and by the various trolley lines that connect it with the city. To say that any proportion of these suburbanites ever rode down to New York or any other city in their own carriages is as absurd as it is untrue. The trolley helps to annihilate time and distance, and it has entirely a different office to perform than that of a carriage. The truth is, that more suburbanites own fine carriages for use in their immediate neighborhood than was ever owned by them or their fathers when they lived in a crowded city.

In reference to the statement made that the exhibition of finished carriages at expositions, since the Centennial in 1876, were less in number and importance than were shown at that event and previously, permit me to say, that while this may be true to a degree, the Columbian Exposition at Chicago must be excepted. At this fair there was erected a magnificent Transportation Building, in which there were exhibits from all over the world, and included a very large number of the representative carriage builders of the United States, and pehaps the largest and most important ever held.

Since that time no such opportunity was offered in America until now, and this year, at the Pan-American Exposition at Buffalo, there is no Transportation Building proper, and the exhibit of carriages is confined to three concerns. One is one of the largest builders of all classes of vehicles, from the prairie schooner to a push cart. The second exhibitor is a catalogue house, and the third exhibitor a manufacturer of pony vehicles. While this extreme of conditions is true, it only argues one thing, and that is: The carriage manufacturers have found a better way of marketing their goods than the expensive, limited and unsatisfactory way of showing them at Expositions, large or small, national or international, except at carriage dealers' conventions.

The trade has progressed to a point that through personal representatives and printer's ink, and the close margins on which carriages are produced, that the indulgence in the luxury of exhibits is growing less and less, and even those exhibitions made at carriage dealers' conventions are disregarded by the great majority of builders.

Therefore, neither the use of the trolley, nor the absence of carriage exhibits from expositions, great or small, argues the decline of the industry of making fine carriages.

I think our own people, and especially our own trade papers, should wake up to the fact, and representatives of the foreign countries, including the United States consuls abroad, should be instructed that the building of fine carriages in America is not on the decline, but that the builders of high grade carriages, light and heavy, are enjoying the present prosperity of the country, as much as any other branch of manufacturing.

MORRIS WOODHULL.

PORTLAND, ME., June 20, 1901.

Editor of THE HUB:

Dear Sir—Your favor of the 10th with inquiry at hand. Twenty-five years would cover our experience in the carriage business. Now, in Portland, Me., at the present time there are not as many good carriages sold or built as there was twenty-five years ago, but more, in our opinion, than there was five years ago.

Our opinion is that builders of medium class work are to-day building their carriages in good style, using fair material, finishing them well; that they are making carriages satisfactory to the average buyer, and it is pretty hard work to draw the line between really fine carriages and the medium carriages of to-day.

In most instances, within our experience, even the builders of fine carriages are selling more or less of the medium carriages, simply for the reason that they find a good many customers will not pay the expense of a fine carriage, but want a good looking carriage at a little less money, and they find it necessary to supply that class of the community. We certainly do not think the increased sale of fine carriages has kept up with the increase of population in the last twenty-five years.

Yours respectfully,

F. O. BAILEY CARRIAGE CO.

DETROIT, MICH., June 19, 1901.

Editor of THE HUB:

Dear Sir—Yours of the 11th duly received. From my experience in fine and high grade carriage building in the United States during the past twenty-five years I am convinced that there has been a decided decrease. During that time I was on several occasions one of the judges at the Michigan State Fair; there was then at least a dozen or more factories, outside of Detroit, that made good work, work that would pass a rigid inspection. I know of none now. For nearly forty years it has been my custom to make one or more annual trips East buying finished and unfinished work and material and posting up on trade generally, taking in the principal cities and factories on the route. The trip East last October was so discouraging that I did not complete the route, showing so many of the fine and high grade factories that I used to visit either closed or nearly so. It might appear personal, and it is not necessary to mention places or names, but the fact is plain that there has been a large decrease in fine carriage building in the United States during the past twenty-five years.

Yours truly,

HUGH JOHNSON.

CANADA'S GREAT EXHIBITION.

THE Toronto Exhibition, to be held from August 26 to September 7, announces that its principal characteristic will be the adoption of new century ideas. The phrase might be considered a bit indefinite but for the fact that contemporaneously the statement is made that there will be daily and nightly displays of all the new weapons of war as well as recent developments in the arts of peace. The pom-pom will be on view, wireless telegraphy will be shown in practical use off the shore to passing vessels, magnificent displays of illuminating effects will be made, recently announced developments in electricity will be shown, a splendid carriage and automobile exhibit will be made, automobile races will take place, demonstrations will be made in the cultivation of the sugar beet, modern methods of rescuing at sea will be illustrated, manœuvres with latter-day artillery will take place, in fact the military will be very much in evidence in all its branches, while the handy-man, as the sailor is termed, and the marines will also be used largely in the off-shore operations, and the brilliant nightly spectacle, the bombardment of the Taku forts by international forces. An international military tattoo will be the feature of the opening night, when a large body of troops will be utilized. A strong exhibit of French-Canadian cattle, as well as of Pan-American live stock, is to be made. In fact, in the live stock, dairy products and manufactures, Toronto Exhibition never promised so well as this year. Greatly reduced rates on the railways and steamboats have been arranged for, and no better time for visiting both Toronto and the Pan-American could be desired than between August 26 and September 7. When it is stated that this year Toronto will distribute upwards of $35,000 in premiums, and spend $30,000 in special attractions, all of which can be seen from the grand stand for 25c., the magnitude of Canada's greatest exhibition will be appreciated.

A DRAWBACK ALLOWED.

WASHINGTON, D. C., July 20.—The Treasury Department has instructed the collector of customs at Ogensburg, N. Y., to the effect that on the exportation of hubs manufactured by the Ogdensburg Hub & Spoke Co. wholly from imported elm blocks, drawback may be allowed equal in amount to the duty paid on the imported material used, less the legal deduction of one per cent.

The formalities to be observed by the exporters in this case may be of interest to the trade at large. The official instructions set forth that the entry under which the merchandise is to be inspected and laden must show the marks and numbers of the shipping packages and the contents of each package, describing the same in detail as they are described in the export invoice. The drawback entry must further show the size (diameter and length) of the finished hubs. The imported blocks must be stored separately from the domestic hub blocks and separate accounts, open at all times to the inspection of customs officers, shall be kept of imported hub blocks.

In liquidating entries the quantities of the imported material which may be taken as bases for allowance of drawback may be the quantities declared in the drawback entry after official verification.

CARRIAGES IN THE NETHERLANDS.

CONSUL HILL writes from Amsterdam, May 31, 1901:

"There is but one firm at Amsterdam dealing in American carriages at present, and even this one will probably give up the business soon, as the article does not sell well here. The reasons given are that American carriages are so constructed that they can scarcely turn in the narrow Amsterdam streets, and are not strong enough to be used on Dutch roads. It is also claimed that American wood is unable to stand the wet climate, and cannot be readily procured here—hence repairs cause much trouble. Carriages are also too cheap to be trusted by Dutch buyers, prices ranging here from 450 to 2,800 florins ($180 to $1,120). Some are sold to the Dutch East Indies, but the demand is not regular. American manufacturers, in order to secure a place in this market, should copy Dutch models. The duty is 5 per cent. ad valorem."

MEN are very much like dogs; the more worthless they are the more they howl when they get hurt.

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PAN-AMERICAN EXPOSITION.

FEATURES PLEASING AND OTHERWISE—CARRIAGES, WAGONS, CARRIAGE MATERIALS, AUTOMOBILES AND MACHINERY.

To the visitor who recalls the expositions of 1876 and 1893, at Philadelphia and Chicago, the Pan-American Exposition of 1901 seems small in amount of goods shown and extent of buildings, but if judged from the more equitable standpoint of being local rather than international, it commends itself to all fair minds as being worthy of high praise, and the weak points in some respects can be overlooked as they pertain mainly to the lack of that executive ability which is necessary in order to make the exposition a financial success. Whether or no the failure so noticeable in some departments is accountable for the illiberal position of the railroads, we cannot say; but certain it is that neither the management of the exposition nor the citizens of Buffalo, who have so much at stake, have any reason to feel that the railroads centering into Buffalo are at all in sympathy with the Pan-American Exposition. The excursion rates are illiberal in the extreme. The short-time rates suffice for those sightseers as are satisfied with a single day's stay on the grounds, but to none others, while the rebates on long time tickets are so slight as to make them of little value to the public. Buffalo is a great railroad center, and it would seem as though the railroad officials could be made to realize that they would best subserve their own interests by a liberal policy toward the public, a policy that would double if not quadruple the travel over their roads. Most railroad officials move only when forced by an irresistible public demand, and it would seem as though the citizens of Buffalo should act en masse and compel if possible a reduction of rates to one-half fares on a thirty days' limit at least. The average attendance is about 40,000 daily, a large percentage of which must be local, as employes at the railroad stations state that the increase in travel is very slight over what it usually is at this season of the year. Very few excursion trains are run, and the popular trains which carry the bulk of the traffic are crowded as heretofore, while the less desirable ones run with light loads. If the dissatisfaction so general was crystalized it is possible that a change could be wrought which would benefit the city of Buffalo and the exhibitors, many of whom now feel that they made a mistake in incurring the heavy expense necessary to present and maintain their goods in an attractive manner. The feeling is almost universal that the exposition must prove a financial failure unless the railroad managers can be induced to make lower rates and more liberal time limits, and if a financial failure it will from necessity fall short of a success to the exhibitors.

As to the exposition of itself, there is much to praise and not a little to condemn. The directive and constructive ability that devised and erected the buildings, the genius that planned the grounds, the artistic talent that developed the decorative features, the cultured taste that gave tone to the picture, and the landscape gardening that made so much of beauty to the grounds, are each and all worthy of highest praise; but the executive ability necessary to make the exposition a financial and commercial success seems to be wanting, and discontent is evidenced in almost every department, but in none other so much as in the Machinery and Transportation Building. While the great number of applications for space, and the limited amount at disposal affords a reasonable excuse for some of the short-comings there is nothing to justify the hodge-podging of the exhibits and the curtailment of space in some places to an extent that made it almost impossible for the occupants to make a creditable display, and to extend it in others where the exhibits are few. Then, too, the presence of so much unoccupied space where applicants by the scores had been turned away or their exhibit cut to a disgustingly small display, and the care taken of the fakir are glaring evidences of the lack of ability in those having the matter in charge. As it now is, a more inharmonious and unsatisfactory exhibit of attractive products, we never saw in any great exhibition than is shown in the Manufacturers and Transportation Building, and can compare it to nothing more apropos than a county fair, and we regret to learn that appeals, threats, even to the extent of an appeal to the courts, have proved insufficient to move the powers that be to deal justly with many exhibitors. That this condition does not extend to all the buildings is a source for congratulation, as the visitor can find places where harmony reigns, and where the eye is treated to sights at once beautiful and instructive.

The one defect on the grounds is the entire absence of guides of any kind to point out the respective buildings. A few flags or streamers bearing the names of the respective buildings and signs directing to the various points would prove decorative as well as being a convenience to the public. These might interfere with the sales of guide books and maps, but they would save many long and useless tramps and wasted hours. In one department, and in one only, are there signs pointing the way to specific points, and that is in the "Midway," which is so located as to be the first to meet the eye of the visitor as he enters three of the four principal gates, and covers nearly one quarter of the entire ground. Chicago set the pace for the Midway, but placed them outside of the grounds; but the Buffalo management took it into its arms and gave it the place of honor, and it is possible that at the next great show the "Midway" may be the one great "educational feature," while the products of the farm, loom and workshop may be secondary features.

Of the general features of the exhibit grounds one cannot speak in too high praise. The buildings are conveniently located, and possess much architectural beauty. The main or central space has for its principal feature at the north end the electric tower, a beautiful structure forming the dominant feature of the ground, its great hight and curved wings on the sides, and the great fountain, rivet the attention by day, while the great tower of light and the brilliant illumination of the fountain and wings make it a sight at night that would be hard to excel. South of this is the Court of Fountains, a beautiful conception of active water spouts, with the great Fountain of Abundance at the lower end, facing on the esplanade. Still further south is the Triumphal Bridge, at the four corners of which are four great towers, surmounted by colossal equestrian figures, the horses being thirty feet high, the entire figures, panel and otherwise being allegorical, forming grand companion pieces to the electric tower. At the sides of the tower and Court of Fountains are located the four principal buildings, in front of which are the halls and passages, which pass before the tower. The Horticultural, Mines, Graphic Arts Buildings, and the Temple of Music, are located at the west end of the esplanade, and the United States Government Buildings and the Ethnology Building at the east end, the latter being in its general appearance a companion building to the Temple of Music. The State buildings and those of Pan-American countries are conveniently grouped in different parts of the grounds, and are made pleasant by the skill of the landscape gardeners. Groups and figures of statuary are numerous and so placed as to give beauty to the surroundings. Some of these are fine conceptions, and there are few that are not worthy of praise.

To us the color scheme has lent a charm to the exposition that will make it remembered with pleasure long after the architectural, allegorical and landscape features are forgotten, and no one man among the artists who aided to make the buildings and grounds a thing of beauty deserves greater praise than C. Y. Taylor, who had this feature in charge. The great "White City" at Chicago impressed all who visited it, but the expanse of white tired the eye, and left unbroken lines except where the architect had made them conspicuous. At Buffalo, color, soft and mellow in its varied tints, cut out panels, cornices, windows, doorways, vestibules, arches, etc., until each stood out in its own true form, every line beautified by the artistic coloring. There is nothing harsh or offensive any where, the artistic touches of color while hightening the effect, please the keenest sense of beauty, and relieve the monotony that a single color imparts. We can best explain the motive that covered the color scheme by quoting from Mr. Turner, director of color. He says, "Taking it for granted that as we enter the grounds from the park, through the fore court, the causeway bids welcome to the visitors, and the countries taking part in the exposition, we would come upon the elementary conditions, that is, the earliest state of man, suggested on one side, and primitive nature on the other. I concluded that the strongest primary colors should be applied here, and that as we advance up the grounds the colors should be more refined and less contrasting, and that the tower, which is to suggest the triumph of man's achievement, should be the lightest and most delicate in color. I therefore began at the entrance to the grounds with primitive or primary colors, and as I advanced up the Court and into the exposition the colors became more refined and grayer, reaching a climax at the Tower, which was

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to be the lightest and brightest in color. Since I wished in some way to emphasize the great power which was being used to run the exposition, the beautiful emerald green hue of the water as it curls over the crest of Niagara Falls seemed to be a most fitting note to carry through the exposition, and I therefore adopted it, and have endeavored to carry this color on some portion of every building. In the Tower I have given it marked emphasis, and have made the general scheme here ivory white, green and gold.

"The Rainbow City" may serve to give an idea of color, but it convey a faint idea of the really beautiful effects, due to the artistic distribution of the tints, hues and shades that are so harmoniously blended and spread over the great expanse of walls and towers, producing a picture which grows more and more beautiful as we study it from some advantageous point. No more beautiful effects were ever produced by the artist's pencil, and the visitor may spend hours studying these effects and finding new beauties at every turn, and to the Pan-American Exposition must be awarded the credit of being the first to teach harmonious coloring in conjunction with architectural effects with great groups of buildings. If this were all there was to the exposition it would be sufficient to warrant a visit to the grounds, but it is not all, and they who have enjoyed the delights of so vivid a color picture will be prepared for the enchantment to follow when the great expanse of walls, dome and tower is penciled by that magician electricity. But to see this in its fullness one must be present when the first faint glow of red outlines cornice, columns, dome, windows and doors, and watch it as the color hightens to a brighter red, and then passes off to that peculiar glow of white light that is produced by electricity alone, when every outline becomes vivid, and everywhere the tracings and panels become almost as it were a living flame. No more brilliant sight was ever seen, and no human being, no matter how cold his nature, can stand unmoved by burst of flame around him. Each night as this lighting is repeated the vast throng gathers to view it, and stands spell-bound until the full glow is reached, and then, as by one accord, make the air to echo with applause. How it effects some was impressed upon us as we passed among the crowd after leaving our vantage point was illustrated by an elderly lady who, speaking to a companion at her side, said: "I wonder if the resurrection dawn will be as beautiful as this." Having closed a day at the exposition by witnessing this grand illumination, one that gives an idea of what man can do with that great modern element electricity, one can go to their home and mark on the calendar "a day well spent."

We could wish that there were no "Midway," with its fakirs and humbug expositions, to mar the beauty of the exposition. There the loud-mouthed crier tells his public of what he has to show, and thousands spend their money to see sights that can in no way benefit them, and many of which pander to the lower nature. Managers assert that these shows are educational in character, and are therefore to be advocated, but with few exceptions the education furnished by them were better unknown, and their whole tendency is to detract from the truly educational features of the exhibitions. The effects are bad enough when confined to men and women of mature years, but they are in many cases totally unfit for the young, and of a right ought not to be recognized in any way as a part of an industrial exposition.

As to the exhibits themselves, there is little that is new, but much that is of value. Those of the various Pan-American States illustrate in a measure the position occupied by each in the mechanical, agricultural and mining world, and the most casual visitor will find it advantageous to make a tour through the various booths of those countries. They, however, show little in the way of manufactures, and therefore do not reveal the true condition of the mechanical arts, and leave no guide as to the possible wants of the people. There is absolutely nothing in the lines represented by THE HUB, and we are compelled to do more than mention the fact of their presence.

The special exhibits that interest the readers of THE HUB are centered in the Machinery and Transportation Building, and in the Manufacturers and Liberal Arts Building, with a few scattering exhibits elsewhere. The bulk of the exhibits, however, are in the first mentioned building. Here are grouped carriages, hearses, wagons and carriage materials, which, though few in number, present a creditable exhibit. The larger part of the space devoted to transportation is occupied by automobile manufacturers. These represent the various systems, such as electricity, steam and hydro carbon. in a variety of styles, and displayed in a fairly attractive manner. As a whole these exhibits are interesting as regards styles and finish, while the general display proves of special interest to visitors, notwithstanding the novelty of the automobile no longer exists. The vehicles shown are of standard and approved types, the greater portion of which are familiar to the public. The only question of importance now agitating the automobile world is which system is the best. Each has its advocates and earnest talkers, and detail the merits of the various systems with a zeal begotten of enthusiasm.

The carriage exhibit is less numerous, but many desirable types are shown. That more carriages were not shown is due to the curtailment of space, which was in some cases so marked that the applicants refused to make an exhibit, and when one looks over the ground the mismanagement that led to this result becomes most apparent. One house is awarded space in which a dozen or more vehicles are displayed, while another of equal reputation is cut down to three, and directly in the midst of the vehicles a large silk loom is located without any apparent reason for being in such a position, entirely away from all other working machinery, while near by are two unoccupied spaces. Few exhibits are more attractive than those of carriages, and it is a matter for regret that so little space was provided.

The most important exhibit made by one house in this building is that of the Studebaker Bros., of South Bend, Ind. They show a line of fine carriages of their own manufacture that includes representatives of the most popular types of pleasure vehicles. The show vehicle is a light four-wheel driving wagon, body on gig lines, hitched to a display horse. This shows the vehicle to the best advantage, and an appropriate harness for a vehicle of its class. The body is painted black, gear and ornamental panels, etc., red. It is furnished with solid rubber tires, and being neatly trimmed attracts marked attention. It is shown in the plate in our department of "latest styles." A family cabriolet is a most pleasing vehicle. The form of the body is on fashionable lines and without radical features of any kind, but everything in gear, body, trimming and finish is harmonious and graceful. A break shown would please the lovers of this somewhat dashy and popular vehicle, while the brougham is a credit to its class. The other vehicles were traps, buggies, depot wagons, mountain and business wagons of standard types. They, as well as all other parts of the exhibit evidence skill and good taste on the part of designers and constructors. In the Stadium this company show a line of their famous farm wagons, contractors' carts and farm wagons specially adapted to South American countries. A third exhibit is in the Ordnance Building, where are shown a regular army escort wagon, and an army ambulance, while outside the streets are kept sprinkled by the Studebaker sprinklers, making a combined exhibit of great merit and usefulness.

George Werner, of Buffalo, N. Y., has a fine exhibit of carriages of his own manufacture, and of other builders of fine work. The display is well located, and attracts much attention both on account of the variety of vehicles shown and the high character of the work. Mr. Werner's own products consist of five vehicles, among which are two Werner speed wagons, on arched axles and pneumatic wire wheels. The novelty of these little vehicles excites much interest, not only among horsemen, but from the carriage users, who do not include the speedy trotters in their list as well. These wagons have been well tried and have given satisfaction to all who have used them. They belong to the latest class of light vehicles, and further evidence the ability of the American carriage builder to produce lighter wagons that possess the requisite strength than can be made by any carriage builders in the world. Mr. Werner also shows a speeding cutter of marvelous lightness, built on "Portland" lines; also an extension top surrey and a cutunder buggy. In his booth and under his charge is an exhibit of carriages from the well-known house of Henry Hooker Co., of New Haven, Conn. These consist of a brougham, a landau, victoria, break and a demi-mail phaeton. These carriages commend themselves, in their artistic outlines, superior construction, harmonious proportions and perfect finish. They receive many well-merited commendations from the general public and carriage experts, each being ideal carriages of their respective types. Another exhibit in Mr. Werner's booth is the S. R. Bailey & Co., Amesbury, Mass., pneumatic runabout. This gem of a carriage has no superior in its line. Symmetrical in form, perfect in mechanical construction and highest grade in finish, it can safely challenge any vehicle built in this country, and discount any built in any other.

Waldron & Riker, of St. Paris, O., show a most interesting line of pony vehicles and specialties. Few builders are able to present so fine a line before the carriage world. Their exhibit consists of nine vehicles, among which is a basket Governor's car, the upper or seat

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section of well woven reed, the frame being shaped to insure the greatest safety and comfort. Another is the Woodlawn cart for ponies. It has an adjustable seat, so as to insure a perfectly balanced load, and other features that make it a most desirable vehicle. A miniature runabout, with woven reed seat body, hung on elliptic springs, a perfect duplicate in miniature of the popular runabout of full size. The "Little Queen," a cutaway front buggy with deep side panels and seat, and canopy top, a pony vehicle that can be used by adults as well as by children, is another of this fine collection. The Newport pony wagon, for medium pony, large enough to accommodate two adults, if desired, is a fashionable and stylish carriage. The covert wagon, a high trap, is the dandy vehicle of their show. It is designed for a medium pony or small cob, is roomy, has a high cutunder body with deep spindle seat, and a folding rumble, which can be enclosed so as to be entirely hidden from view in a manner that leaves no suggestions of its presence. A park phaeton for children, but strong enough and with sufficient leg room for adults, is a popular style of phaeton with reed seat; a comfortable as well as stylish vehicle. A Linden and a Belmont trap are two good representatives of the trap family. These are designed for two or four passengers. They differ in style only in the construction of the seat, one heavy slat sides, the other woven reed. The "Birmingham" is a full size, two-wheeler, for two or four persons, with seats dos-a-dos. It has a canopy top, and has a shaft attachment that overcomes horse motion and contributes to make the vehicle a most comfortable one, with full as well as partial load.

This firm have a large export as well as a widely extended home trade in pony vehicles, and are equally well known as manufacturers of specialties for pleasure and show purposes.

W. C. Koller Carriage Co., Glen Rock, Pa., show six vehicles, consisting of a depot or station rockaway, two buggies, two canopy top surreys, and a phaeton. The character of this work is such as to commend it to the buyers of good vehicles, and notwithstanding the high grade the prices are sufficiently low to attract the general buyer. The styles are good, the lines being of the popular form, the mechanical construction of high grade, as is also the finish. This company is one of the few that has sold work from the samples shown, and even these are bid for, to be delivered after the exposition. They are now erecting a large addition to their factory, and will soon be able to make their work as well known in distant localities as it now is at home.

The Elkhart Carriage and Harness Company, of Elkhart, Ind., make a large and varied exhibit of family carriages and harness. Their carriage exhibit consists of extension and canopy top phaetons, surreys, extension and canopy top spider phaetons, buggies of various types, pneumatic and wood wheels. This house is well known as retail manufacturers, and all their prices are quoted in their price-lists. They do no wholesale trade, and sell at wholesale prices to the retail trade.

There are two exhibitors of harness, both of whom have restricted space, and are therefore compelled to show a smaller number of vehicles than they otherwise would. The location occupied by them is distant from the carriage exhibit, and in close proximity to automobiles and operating machinery.

The Crane & Breed Company, of Cincinnati, O., show three hearses representing that many of their styles. One designated as the "Templer" style is a columned square hearse without glass, heavy paneled sides and heavy carved drapery, festooned and finished in dead black, presenting a plain and neat appearance. The heavily molded top and base, combined with the round and carved top pillars, the heavy solid carved drapery doors, together with the drapery and a heavy hammer cloth seat, large oblong, round-bodied lamps, with solid drapery, make this an imposing vehicle.

A more elaborate vehicle is the "Princess Alamo," a heavily columned design, each side having four groups of two columns in each with heavily carved bases and caps, dividing the sides into three panels, one wide and two narrow, over each of which are heavily carved shell ornaments. The deck is heavily carved in leaf designs, the top doubled and massive, the boot a heavy hammer cloth, ornamented with plated scroll rails, seat and bracket handles and heavy square columned lamps and inside ornaments, heavy inside drapery, highly finished and provided with rubber tires, it presents an imposing appearance. A third hearse shown by this house is styled "Patriarch." The body has four columns on each side, elaborately carved, the center panels on each side being much wider than the end panels; the spaces over the glass are decorated with heavy carvings. The heavy drapery is inside of the glass. The boot is a heavy hammer cloth trimmed with chased plated seat rails, handles and bracket handles, the lamp being a large round one with oval panels. The interior is decorated with heavy plated scroll ornaments, the wheels are provided with rubber tires. These three hearses are all most artistic and attractive vericles, and they represent styles now in use at different places.

The other exhibit of hearses is by the Rock Falls Mfg. Co., of Sterling, Ill. They show one elaborately carved hearse, one of the most expensive funeral cars ever made. The carvings required four months' labor of the workman, being all hand work and carefully cut so as to carry out the full design of the leaves and devices without leaving any sharp points. The design of the body is square, with heavy carved columns. The interior is finished in mahogany, and there is an absence of the usual metallic pens and rails, as the casket is held in place by a device originating with this company, which by means of a screw worked by a crank, when the doors are open, grips the casket, centers it on the base and holds it firmly without marring. This device can be operated only when the doors are open and the crank shaft drawn out. When the casket is secured this shaft is forced in and the doors closed, making it impossible for it to move, thus obviating all possibility of the casket moving until the doors are opened and the shaft drawn out. The device is very simple, and is not likely to get out of repair. This hearse is valued at $4,000, and is certainly a model vehicle. Roller bearing axles and solid rubber tires complete the mechanical outfit. They also show a hospital ambulance, replete with appliances for the comfort of the patient, the main feature being a portable carrier of basket work for carrying the sufferer to and from the ambulance. Ample provision is made for relieving the stretcher from jar when the vehicle is on its way to the hospital. The provisions for ventilation are to all appearances perfect, while ample room is provided for the attendants. The lighting is by an electric lamp placed in a dome, while a portable lamp is attached to an electric wire for use outside of the ambulance; ball-bearing axles and rubber tires to improve its running and riding qualities, and a large rotary gong as an alarm. It is a very complete vehicle of its class.

Another vehicle shown by the company is an undertakers' wagon, fitted for the transportation of dead bodies, caskets, chairs and such other articles as are needed for properly conducting the burial of the dead, not overlooking a rack for the transportation of floral offerings to the grave. Being paneled with glass it may be used in the funeral procession, the inside drapery being removable, so as to expose the floral tributes is desired. This and the hearse make a most complete outfit, and the company may be well pleased with their display, notwithstanding they were not awarded one-half the space asked for.

The only other finished vehicle is a standard pattern ice wagon by the Knickerbocker Ice Co., of Philadelphia, around which are the needed appliances for cutting and corrugating the surface of the cakes of ice when on the endless chain carrier which conveys them to the house, a miniature model of the carrier and the corrugator being shown.

Vehicles in the white are shown by two firms, the largest exhibit being by the Buffalo Spring and Gear Company, of Buffalo, N. Y. They show six of their vehicles in the white, trimmed ready for painting. They are hung on pneumatic gears, wood and naked with wood and pneumatic wheels, the bodies being provided with reed panel or spindle seats, and finished plain or with moldings. These vehicles are popular with the trade as they are thoroughly well made, of fine stock, and of the most approved proportions. The company sell to the trade only. They find buyers of finished carriages very much interested in them, and they invariably write to some dealer in the town, where the would-be buyer dwells, and notify him of the wishes of the inquirer. The line is a popular one, and the company find their exhibit attracting much attention, and will undoubtedly reap a harvest from the exhibit.

Schubert Bros. Gear Co., of Oneida, N. Y., show one of their speeding wagons, in the white, on their patented gear, and wire wheels. The weight of this little vehicle is one hundred and twenty pounds, and it is a fine specimen of carriage construction, bearing evidence of great strength, and so well proportioned as to merit the closest inspection. They show the one vehicle only, but this is so meritorious as to command attention of all who go to learn.

M. Van Wagenen, of Syracuse, N. Y., exhibits a dump wagon of special construction which seems to possess many meritorious features.

(To be continued.)

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PHILIPPINE TRANSPORTATION.

SOMETIMES there are two, three and even four caribou or water buffalo attached to the little two-wheeled carts of the Philippines, and the sight of a native rider on each is always attractive. The photograph shows a two bull hitch, with the native drivers riding. The road over which this cart is being drawn is quite smooth, as are a great many of the new roads of the islands. The prisoners and



CARIBOU TANDEM.

the native workmen have now been employed on the roads for over a year in all sections, and the sandstone and gravel roads are very good. The native carts carry about 800 pounds and they do considerable freighting for the stores and commercial houses of the country. A cart such as is shown, with two animals and two drivers, can be hired for 60 cents gold per day.

For purposes of mutual protection against ladrones, guerrilas and the like, the native drivers often wait in cities and towns or at stated points for days until other wagons are going in the same direction, and then all move together in one train. Then, if attacked, they will be in larger force and may be able to resist the enemy. Again, they



TRAIN OF CARIBOU CARTS.

go in trains, so that when reaching bad places or hills the teams can be doubled up. There is a large amount of traffic of this kind always in progress in the interior, where the cities and towns cannot be reached by boat.

All of the draft animals of the Philippines are branded as soon as they are large enough to run about. Most of the brands are some sort of a triangular form. The process of branding consists in throwing the animal and tieing his feet. He is held down while a native applies the heated brand until the brand is burned into the hide. The wound soon heals, but the scar is permanent, and the owner can always recognize his property.

AN UNSUPPORTED STATEMENT.

THE *New York Herald* of June 23 says:

Speaking of the origin of styles in carriages and harness, P. F. Murphy, who is now the head of the famous English and American house of Mark Cross & Co., said the other day: "Everything fashionable in carriages and harness seems to originate in Paris. I am sometimes tempted to say that every fine line in our modern pleasure vehicles has been taken from the French."

We will not question Mr. Murphy's honest intention when he made the above statement, but we cannot understand how a man in his business should have been so misled. There was a time (twenty-five years ago) when such a statement would have been very close to the facts, but that time has passed. American carriage builders don't refuse a good thing, no matter where it originated, and if a French or English designer shows something artistic and novel, our builders make use of it, but unfortunately there has been a marked absence of novelties of foreign origin during the last two decades, and as it now stands, carriages such as milords, coupés, landaus and coaches show nothing new to the American builder, while the milords most noticeably are copies of American designs that have been discarded by American builders two years or more. The Paris Exposition was well patronized by leading French builders, and in all the display there was little that was new in the styles of bodies, and that was confined mainly to sporting vehicles and two-wheelers, and even that was more in colors than in lines. The genius of the French painter enabled him to produce pleasing results, and gave a freshness without disturbing lines. There never was a time in the history of the carriage trade when American builders were so independent of foreign designs as they are to-day, nor when foreign builders had so little that is new to offer.

We are not inclined to belittle the genius of English or French builders, and are in hearty accord with the idea of adopting new and artistic lines whenever we can obtain them, and giving due credit to the originator, but we do most emphatically protest against the assertion that "every fine line in our modern pleasure vehicles has been taken from the French," and challenge Mr. Murphy, or any other man, to prove such an assertion, or to produce one each of a half dozen styles made by our popular builders during the last year that are ever so remote copies from the French.

JAPAN.

To the carriage builders, Japan has become one of the best customers in what we may call its "Cab" vehicles, for Japan has its national vehicle the same as America has its "Buggy," Ireland its "Jaunting Car," and the various vehicles which are typical of English coach making. The Jin-riki-sha is the national vehicle of Japan, and is mostly imported from the United States, finished complete and ready for the road, and the extent of this trade with the United States may be gathered from the fact that in the city of Tokio alone there are 10,000 of these Jin-riki-shas plying from hire and for private use.

The "Cab" in Japan is not on the motor principle, nor is the aid of horses, mules, or donkeys requisitioned for the work. It is a little light two-wheeled hand vehicle, drawn by coolies, similar to a large sized "Mail Cart," after the stamp of those used in England for children, but made to suit the height of a 12 hands pony, thus bringing the shafts about right for the draught labor of a coolie. The fronts of the shafts are connected with a cross draught bar, fixed to the end of the shafts, against which the coolie throws the weight of his body when pulling the vehicle by the shafts.

The body is made to hold two persons, and is fitted with a folding hood of light material as a protection against the sun, and to some extent the rain as well. It is made with light solid sides and the shafts are fixed to it rigidly. Light elliptic springs are used in its suspension, and the wheels are of very light construction, but tangent bicycle wheels are gradually superseding wooden wheels, and ball-bearing axles are used for best work.

The Jin-riki-sha has also found its way to South Africa, and in the November issue of the *Art Journal* will be found a drawing of a "Rikisha" fully equipped, which was reproduced from a photograph, so that its construction can very easily be grasped by any practical coach maker, and the dimensions are simply the necessary seating for two persons, as in a pony cart, with the head room necessary from the seat to the slat, usually a depth of 42 inches.

Our earnest desire is to use our space to promote the expansion of our export trade, wherever it is possible, and to post English coach makers with every available information on the characteristics, and necessities of vehicles suitable for exportation to our dependencies, and foreign countries where trade is to be done.

It is in the building of such vehicles as the Jin-riki-sha, where machinery comes to the aid of the manufacturer, as in the quantity the cost of production is reduced and the ultimate profit increased.

This market for the United States has been made in Japan, through the business instinct of two American missionaries, who saw that a light two-wheeled hand vehicle would be a great improvement on the Kago, which was a basket slung from a pole carried across the shoulders of two coolies, and the Jin-riki-sha drawn only by one man, was a great improvement as regards labor, economy and quickness

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of speed. The introduction of such a sweeping change in the means of passenger transit, and the ready acceptance of the advantages it offered, showed that the Japanese are most eager to adapt themselves to the influences of Western vehicular civilization, and that improvements on their rudely constructed vehicles would be eagerly welcomed where the improvement was shown to be to their economic advantage and national advancement. The ready adoption of the Jin-riki-sha by the Japanese only serves to explain that in every branch of vehicular construction they would become ready buyers, if the vehicles were made to suit their necessities and were adapted to the roads and commerce of the country. The Japanese are the Britons of the East, and a coming nation of great military and commercial power, it is, therefore, for us to share in the demand for their needs, or to create them, until the time comes when they can manufacture these things for themselves.

It will be as well to specify here what the vehicles of Japan are like. The high road vehicles are small stage wagons, constructed for the conveyance of passengers alone, but they are very badly made and insecure for the work. In the mountainous regions in the neighborhood of Kobe, small bullock cars are used, these, like the other vehicles of native build, are very rudely constructed, and are principally used in the cartage of stone blocks from the hills and for rough country work, and are made of untrimmed timber, and, of course, are anything but strong, being constructed with three wheels only, made out of solid wood; they are drawn by one bullock.

These crude productions could be supplanted, we think, by more up-to-date carts, wagons and trollies, built to meet the local work of the natives. Everything points to the success of a wheelwright venture, that would take in the situation and build vehicles to the native requirements—not to what we, as manufacturers, think they ought to have from us, but what they want themselves. The popularity of the Jin-riki-sha and its wide use has proven this beyond question.

For the transport of baggage or heavy goods, large two-wheeled carts are used, and are drawn by four or six coolies.

The two traveling vehicles which the Jin-riki-sha has supplanted to a large degree, are the Palanquin and the Kago. These are carried by poles on the shoulders of coolies in Sedan chair fashion. The Kago is still used in the mountainous passes where it is impossible for wheeled vehicles to travel. In the transport of goods the pack horse is largely used, which by the way, is shod with straw sandals to protect the frog of the foot, the load being attached to its back by ropes and a rough pack saddle, without girths. These commercial cavalcades go in single file, and only move at a walk. A considerable trade in harness and saddlery could also be done with Japan, we think, if our manufacturers went the right way to work to secure the trade.

In all the post towns, and in most of the large villages, transport offices are established, the branches of some head office in the capital, at which travelers can engage Jin-riki-sha, Kago, or pack horses and coolies, or make arrangement for forwarding baggage, etc. The tariff of hire is fixed by the Government and is paid in advance, a Government or official receipt being given in return. Most of the inns in the post towns subscribe to support one or another of the traveling guilds, each of which has a head office in the cities of Tokio, Kioto and Ozaka. A coolie with Jin-riki-sha travels at the rate of six miles an hour, and the fare is charged at the rate of 5d. per Japanese ri, or about 2d. per mile.

The Jin-riki-sha may be termed a very light and smart two-wheeled gig with hood of light material, as mentioned previously, built as light and as as strong as possible, and, of course, as cheaply as they can be; the wheels would be about 46 inches high, the shafts not less than 40 inches from the ground, width on seat not less than 36 inches by 18 inches, the body and seat paneling of solid sides, the body hung upon elliptic springs, on light side stays or cross spring bar; the wheels would be best made of steel rather than wood, and on the bicycle principle.

The Jin-riki-sha has now become very popular in the southern part of the United States of America, and we learn that in the State of Florida they are quite the fashion. We have no doubt but that China will also become a large buyer of this type of vehicle, because it appeals to the interest and individual labor of the Chinese as a ready means of earning money in the European settlements of their country.

SOUTH AFRICA.

In speaking of our export trade in the direction of Japan, we should not neglect to look nearer home in the direction of our own colonies in South Africa, and although they are at present unsettled because of the war, yet in the near future they will offer an illimitable field for our export trade in carriages and wheelwrights' work, and in saddlery and harness. The Cape cart may be called the national vehicle of South Africa, but the buggy, as introduced throughout the colonies, runs it a tight race. We should like to ask why it is that the United States should have the monopoly of this trade? The buggy is in great favor with all classes of settlers, both in South Africa and in our Australian and Canadian dependencies, because of its ready adaptability to the colonists' mode of traveling. The Americans know this full well, and supply them in ship loads to all our dependencies where they are in favor, and so do a very large export trade in them to our own kinsfolk.

But why cannot our coach makers build buggies as well as the makers in the United States? We lose a big revenue through relinquishing this trade to our rivals, for no other apparent reason than that we are too proud to do the work. But would it not be better to have the hands of a factory making buggies, than perhaps to be standing idle and lamenting the fate of bad times? We are of opinion that bad trade has its cure if we only look ahead and afar for work.

The people of our South African colonies want vehicles, whether they be carriages or transport wagons or farm wagons or carts, to be made as their necessities require them, and it is not as if we were sending them from one part of England to another, where the difference in style and construction would not be felt to any extent. Even in Britain a cart or wagon built in Wilts or Dorset would not find much favor in Scotland and *vice versa*.

The Boer farmer wants his wagon made his way, and the way that will best suit his *known work* and the roads he has to travel over, and be constructed in its detail to stand the heavy work of the track roads of the Veldt; and this is what we ought to study in the first place, and build the vehicle accordingly. The Cape cart appears to be solely confined to the builders of the colony, who have to send to this country for all the accessories used in its manufacture. But why cannot we build Cape carts and send them out finished and ready for the road? And why cannot we make buggies for the Cape, and meet the American builders on our own ground?

American builders are establishing themselves in this country, and find a certain following amongst our people ready to purchase their vans, if they turn aside at the style of their carriages. Their business vehicles are finding a footing amongst our trading customers, such as bakers and grocers. We say—attack our rivals at all points—both at home and abroad. They are attacking us in every part of the world, and by the most prohibitive tariffs debar us from their own ports. On a fair plane we can beat them; we do not want anything but a fair field and fair play, no favors, but honest straightforward trading on our own merits, and let the best win the laurels.

Depots in Cape Town, Durban, Pretoria, Johannesburg, Kimberly, and Petermaritzburg, should be established either as agencies or trade bureaus, supplying every information to intending traders, for in commerce, as in war, we must have an intelligence department.

The United States will be keen competitors with us in our South African colonies, and we should avail ourselves of every use that the best up-to-date machinery can yield to enable us to hold the field, and if capital is well directed to the sources we have pointed out in this article, we think that it would be difficult not to be successful in the result.—*Coach Builders' Art Journal.*

NEWPORT'S HORSE SHOW.

THE prize-list of the Newport Horse Show, September 2, 3 and 4, has been announced. There will be forty-seven classes in all, for which $3,980 is offered in premiums.

The judges will be: Harness classes—Mr. T. A. Maitland, of New Rochelle; Mr. R. Penn Smith, of Chesterbrook, Pa., and Mr. H. K. Caner, of Philadelphia. Saddle and jumping classes—Mr. H. W. Smith, of Worcester, Mass.: Mr. J. K. Maddux, of Warrenton, Va., and Mr. Adam Beck, of London, Canada.

The committees are: Executive committee—Mr. Prescott Lawrence, chairman; Mr. Oliver H. P. Belmont, Mr. Henry F. Eldridge, Mr. Center Hitchcock, Mr. William R. Travers and Mr. Francis M. Ware, secretary and treasurer. Ring committee: Messrs. Lawrence, Eldridge and Ware.

Nearly all of the boxes have been taken for the season at the show, which promises to be the most brilliant in the history of the association.

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Roads and Their Maintenance.

THE MAINTENANCE OF MACADAMIZED ROADS.

BY R. A. MEEKER, NEW JERSEY STATE ROAD SUPERVISOR.

As the mileage of improved roads in our State increases, and as the years roll on, the question becomes more and more pressing: What shall we do to preserve the fine, smooth roads for which our State has gained a national reputation?

Even stone roads will wear. This wear is due to two causes, the traffic and the weather. These act together and react upon each other to such an extent that it is difficult to determine which cause produces the observed effect. Many observations and measurements have been made, by eminent engineers and road builders, of the amount and causes of wear; these results, though varying somewhat in detail, agree in the more important particulars. The causes of wear are the weather, the shoes of the horses and the wheels of the vehicles.

The weather acts to some extent directly on the materials, but to a much greater degree indirectly, by increasing the wear from traffic. Frost expands the moisture in the crust of the road, and when a thaw occurs, a general disintegration takes place, converting the surface into a stratum of loose stone into which the traffic cuts, and the surface becomes saturated with water; especially is this true where clay has been used as a binder. Wet weather, by softening the muddy binding matter, which forms, at least, twenty per cent. of the best road coverings, destroys the solidity and cohesiveness of the road, rendering it less capable of supporting the traffic, and increasing the wear from crushing and rubbing together of the stones. Rain following frost and thaw is very damaging, and alternations of these, frost returning when the disintegrated surface has been saturated by rain, will break up the thickest road- coating if the surface is once destroyed, and the drainage be defective. Violent rain on exposed situations washes out the binding and often the smaller stones as well, leaving the road rough and porous. On hills the scouring of the surface, by water overflowing from the gutters in heavy rain, causes great damage. The amount of material thus washed away from the surface, and even from the body of the neglected road, is often much greater than that worn away by traffic. Long continued drought has the effect of loosening the surface of the roads, and in many localities is even more destructive and annoying than any of the other climatic causes. The extent to which these various effects may be injurious will depend upon the nature of the road materials, on the drainage, subsoil, situation, grades and many minor or accidental circumstances.

Frost and thaw have but little effect on a dry, well-kept road, especially when built of trap.

Heavy traffic coming on a road disintegrated by frost or softened by rain increases enormously the damage originally caused by the weather.

The shoes of the horses, especially in winter, are very destructive to the surface of the road; the sharp steel caulks break up the surface, and thus permit the water to penerate and soften the road covering.

The wheels of the vehicles passing over the road produce several effects which it is important to distinguish: First, there is the grinding and crushing action on the surface; second, the pressure throughout the whole body of the road coating. When the materials are loose and unconsolidated, either because they are newly spread or from having been disintegrated, there is the third action, namely, a displacement of them, accompanied by rubbing together of the stones among themselves. This is the cause of great wear and waste of materials spread in thick coats.

On a thick, thoroughly consolidated road there is no movement in the body, and the wear is confined to the surface. This is the most favorable condition under which road material can be subjected to wear, and it rarely occurs without the addition, to some extent, of the third named effect; namely, a movement and rubbing among the materials, extending to the small depth to which the wheels affect the surface. In proportion, however, as it is confined to the surface will the wear be small and gradual.

Therefore, on roads of all sorts a reserve of strength, in the shape of greater thickness of materials than is absolutely necessary, is always very desirable. The wear is less under the same traffic on a stronger road, which is also better able to stand heavier traffic should it come upon it.

The amount of wear from every cause depends, of course, largely on the road material. Materials of fairly good quality, such as granite, limestone and the various hard field stones, wear from three to five times as fast as trap.

Generally speaking, the wear from every cause is less in proportion as the road is kept in good condition as to surface, solidity, thickness and drainage. It is less on slight grades than on a dead level, because of the better drainage, but on hills it is increased by the effects of running water. The surface of a hill is washed clean and it looks better than the flat below on which the mud is carried down, and this often leads to the neglect of the hill until it is worn down to the rough bottom stones. There is more wear in winter than in summer, in wet situations than in dry. And last, but by no means least, when traffic follows in the same track, which it has a strong tendency to do, particularly where the surface is soft and the tracks are visible, there is a great increase of wear. In actual practice, both the wear and the thickness of roads is irregular, and if large pieces of the surface of a road on which the wear is small, and the quantity of materials to be spread is limited, are coated all over, it is certain that thickness is added to one-half or two-thirds of the surface, which is already thick enough to bear the traffic, while other parts, including weak places, must be left until their turn comes to be coated, which may be three or four years. The ordinary wear on the weak portions thus neglected is considerably greater than it would be on a stronger road, and if from the effects of heavy traffic or wet weather they break up, the extra quantity of materials required for their repair may be very large. Instead of thus always contending with a road which is in many parts too weak, the irregularity of wear and of strength in different parts of the coating and the consequent reserve strength in some parts of the road should be taken advantage of. Materials should be spread only on the places that require them, and the whole road should be brought, as near as practicable, to a uniform strength throughout. Thus no portion of the surface is neglected, and so materials are wastefully applied to portions already thick enough to stand the traffic, while a better road is obtained with a less expenditure of materials. In spreading new stone, the old-fashioned way of waiting until the road has lost its shape, and then spreading a thick coat over a large surface, and leaving it to be worked in by the traffic without further care, should never be followed. A good deal of the new material is thus wasted by being ground up and crushed before it is consolidated, and when at length this has been effected, at great inconvenience to the traffic, the surface of the road will be left irregular and out of shape. The materials necessary to replace the wear of any ordinary traffic can be spread in comparatively small quantities, where hollows or weak places appear, or where required to keep the cross-section of the road in good form. If they are laid in small patches and with care, the inconvenience to traffic will be scarcely noticeable. It should be remembered that until the newly-spread stones are consolidated, the operation is not completed, and if the task of working them in is left to the public, it is only right that the process should be rendered as easy and speedy as possible, by good arrangement and care in spreading the materials and by attention to them after they are spread.

On a road maintained in good repair, under a good system, there are no holes, ruts or long hollows worn by the wheels of the horses' feet, but only irregular depressions or slacks in the surface which show where fresh material should be applied. They are more or less rounded, undefined in outline, less than an inch deep in the middle and shallowing gradually towards the edges. Considerable care is required in determining the size and shape of the patches of stone to be spread in these hollows, as both a good result and economy of labor and materials depend upon it. Inexperienced workmen are inclined to lay stone in rectangular patches, with more regard to the neat appearance of the newly-spread stone than to the needs of the road. Parts of round or oval-shaped hollows must thus be left uncovered, or fresh stone must be spread where they are not required. The angles of a square patch are very liable to be knocked away, and if the stones are not wasted in this way, they do not set so quickly as if laid in a rounded form. If the ends of a patch be made in the form of an oval, more or less pointed, the traffic will wear it in from the sides, and on a hill the water will be diverted towards the sides of the road instead of running into the stone, as it does with a square-ended patch. Care should be taken to cover the whole surface of a hollow so as to leave no place where water may lodge. The object should be to give the surface, after consolidation, as nearly as possible the regular form due to the cross-section of the road. If from neglect or bad management, long ruts or large hollows have been allowed to

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form, they should be repaired in short lengths and one part at a time. Wagons avoid long strips of stones laid in a hollow worn by wheels, and soon make another rut alongside. Laying a long strip of materials on the middle of the road diverts the traffic to the sides, which are sure to suffer a good deal, and may be entirely cut up before the stones in the middle are worked in.

On steep hills, coating from side to side is an unnecessary inconvenience to traffic. One side should be coated first and the other left until the stones are partially consolidated by the descending vehicles. A thick coating should never be laid on; a layer one stone in thickness, the stones being laid sufficiently close to support each other, is almost always enough, and if not, one layer put down upon another when it has almost worked in will give any thickness required.

On roads of considerable thickness, where the surface is hard and the materials tough, picking up of the surface is sometimes useful, the object being to secure a quicker consolidation. Loosening to about one-half an inch in depth is sufficient. The tendency of workmen is to pick up too deeply.

The use of a binding material in road maintenance, when the stones are applied in thin coats and small patches, is seldom necessary or desirable. The road has in it already more than enough small stones and detritus to fill up all interstices, and in the damp weather in which stones should be laid, there is generally little difficulty in getting a layer one stone thick to work in without any binding.

When large quantities of stone have to be laid on a road carrying a large traffic, the use of binding will ease the traffic and cause the new material to consolidate more quickly. A good, clean binding material must be used, evenly spread, and in dry weather watered. Too much binding or a material of a muddy character, will make the road soft and weak. On roads with light traffic, exposed to heavy rain, sweeping winds or long continued drought, a binding material may be used with advantage. The consolidation of the stones after they are laid can be greatly aided by attention on the part of the supervisor. The sooner they are consolidated the better they will wear, and a little care bestowed on newly-laid patches will save much work and material afterwards. Ruts, which always have a tendency to form in newly-spread materials, especially if more than one stone thick, should be effaced by raking across, backwards and forwards. However carefully patches are laid, stones, especially around the edges, will be displaced; they should be put back, as single, loose stones are dangerous to the traffic, hurtful to the surface of the road and liable to be crushed and wasted. If consolidation does not appear to commence, a little small stuff scraped from the surface of the road may be applied as a binding material, especially around the edges of the patch, where the old surface may also be slightly loosened with the pick. The proper season for laying the bulk of the fresh materials is in the autumn and early winter, as soon as the surface of the road becomes softened by the fall rains. Materials laid at this season consolidation more quickly and become more thoroughly incorporated with the body of the road, and hence are less liable to become loosened in dry weather.

There is one other point of great importance in the maintenance of a road—that is, the removal of the detritus resulting from the wear of the materials. This wear may be increased two or three times on a badly drained road; in fact, other work and care are almost thrown away on a road upon which the drainage is neglected. The good drainage of the surface depends upon the preservation of the cross-section with sufficient and regular fall towards the sides, so that the water may not stand in puddles. A smooth and even surface is of greater importance than any particular form of cross-section; the latter may be varied, within certain limits, to suit the situation, and the degree of convexity will always be changed more or less as the maintenance goes on, but a smooth surface to throw off the water is essential. The waters should reach the gutters on the sides as quickly as possible, without gullying the shoulders. On a level or very light grade, the wash from the surface of the best-kept road will settle in the gutters and afford a soil for the growth of grass and weeds, and obstruct the flow of water. On steep grades the gutters often become stopped; when this happens, the water overflows the surface of the road and damages it. Slight but frequent attention is therefore required to maintain the flow of the water from every portion of the road, by removing obstructions from the shoulders and gutters. The scouring of the surface on hills, which is often the cause of great damage, must be guarded against beforehand. Every beginning of a water course or gully must be checked, and all points where water usually breaks out from the gutters, or where outlets or drains get stopped, should be watched and receive attention at once in heavy rains. Outlets and drains should always be cleaned after a storm, for, if another storm finds them unopened, great damage often results from the neglect. A thorough clearing out of all gutters, culverts and bridges should take place in the fall, as soon as the dry weather is passed. If all silt and road dirt are then removed down to the hard bottom, leaving nothing to give a hold or grass or weeds, this will, in the majority of cases, be enough for a general cleaning up. All ditches and lateral drains should be carefully cleaned out and opened, every precaution being taken to remove all water from the line of the road as soon as possible. No water should be allowed to stand in any gutter along the road, as the injury caused by it to the foundation is very great.

The pith of the matter is—good roads require constant attention or they will cease to be. This fact cannot be too often repeated or too strongly dwelt upon.

WANT QUIET ON THE TARIFF.

THE members of the Manufacturers' Club of Philadelphia, Pa., which is one of the strongest business organizations of the country, composed of manufacturers whose industries are directly affected by the tariff, are alarmed at the action of the American Association of Manufacturers in suggesting a revival of tariff agitation. A meeting was held on June 13th, which was largely attended, and after some discussion the following was adopted.

"*Resolved*, That the Manufacturers' Club of Philadelphia deprecates any attempt to revive tariff agitation, as a menace to our continued prosperity; and

"*Resolved*, That should the alteration of any part of the tariff schedules seem necessary in the judgment of the Industrial Commission now investigating the subject, the same should be taken out of politics, and be made the subject of careful revision by a non-partisan tariff commission; and

"*Resolved*, That in adhering to the principles of reciprocity as originally formulated in the Republican platform of 1900, to wit.: We favor the associated policy of reciprocity so directed as to open our markets on favorable terms for what we do not ourselves produce, in return for free foreign markets, and as expressed in existing laws operating through the tariff, which provide for concessions on articles not produced by ourselves in exchange for like concessions on our domestic products, having in view the preservation of the integrity of our home markets."

AMERICAN TIN PLATE TRADE.

PRIOR to 1897 this country was the best customer for British tin plate. Since then, according to the figures furnished by the American Iron and Steel Association, it has gone forward literally by leaps and bounds, the American production being as follows from the year 1892:

Years.	Long tons.	Years.	Long tons.
1892	18,303	1897	256,598
1893	55,182	1898	326,915
1894	74,260	1899	360,875
1895	113,666	1900	302,655
1896	160,362		

On the other hand, the imports have dropped just as rapidly, as will be seen from the figures compiled by the Treasury Bureau of Statistics:

Years.	Tons.	Values.
1890	329,435	$23,670,158
1891	327,882	25,900,305
1892	268,472	17,102,487
1893	253,155	15,559,423
1894	215,068	12,053,167
1895	219,545	11,482,380
1896	119,171	6,140,161
1897	83,851	4,366,828
1898	66,775	3,311,658
1899	58,915	3,758,567
1900	60,318	4,617,813

Prior to 1892 practically all tinplates used in this country were imported, and 1891 saw the high-water mark in the value of the import trade. To-day only about one-sixth of the imports of 1890-91 are obtained from abroad, and according to a consular report, that of Consul Prees, of Swansea, practically all of the shipments from Wales to this country are of oil plates, on which the drawback may be collected when they are reshipped in the form of cans.

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Automobile Department.

LECTURE ON AUTOMOBILE TIRES.

DELIVERED AT THE AUTOMOBILE CLUB OF AMERICA BY FREDERICK W BARKER.

It affords me much pleasure to address you upon the subject of tires, because, in my opinion, this comprises a question of paramount importance to every automobilist.

The advent of rubber as a peripheral cushion for wheels made the bicycle and kindred vehicles possible, and the happily conceived idea of inflating a rubber tube and placing it about our wheels infused such an element of comfort to cycling that it speedily become a world-wide pastime.

To "tread upon air" is considered indicative of a happy frame of mind. It is now within the power of all to literally roll upon air in self-propelled, luxurious vehicles, so that it would seem as though time and inventive talent have brought contentment to our very door, to be had for the taking.

So far as the art of automobiling is advanced at the present time, we know of certain qualifications which it is desirable our tires should possess, and these are summarized as follows:

1. Good material and workmanship, so that the tire will stand up under its load and air pressure without being liable to burst.

2. The tread should be properly reinforced to prevent punctures, but in a manner that will not detract from its free longitudinal yield, because the air compression at the consecutive points of contact with the road, produced by the weight of the vehicle, gives life and speed to the tire.

3. Stability of tread is another most important point. That is, the reliability of the tread to provide a certain predetermined width of contact surface with the road, irrespective of the amount of load carried, or of varying air pressure.

Practice determines the extent of contact most desirable for certain vehicles, according to their weight and propelling power, there being in each instance a happy mean between the too narrow tread that cuts into a soft roadbed and the too generous surface that "eats up energy," as the experts express it.

Of course, in ordinary pneumatic tires we do not require to consider a too narrow tread, since a flattening thereof must always occur, no matter what degree of air pressure is contained within the tube.

I have yet to see on the market a tire possessing this quality of perfect stability of tread, but I believe it to be a desideratum, and in these progressive times, particularly with the automobile fraternity, as we usually get what we need.

It is generally admitted that the pneumatic cushion, owing to its great quality of elastic compressibility, is far ahead of all other forms of tires, where pleasure vehicles are concerned. Its ability to absorb vibration, taking up the shocks and jars caused by traveling rapidly over an uneven surface, commend it as unquestionably the royal tire for motor vehicles, whose occupants are on pleasure bent, and who desire the smoothest riding possible. Besides, the life of the more or less delicate machinery used to operate these vehicles renders the absorption of vibration between the wheel periphery and hub absolutely necessary.

The advocates of cushion and solid rubber tires laugh at punctures and rim cutting, and say no such troubles arise through their use. But then, solid and cushion tires are not in the same class as pneumatics. As well compare the race horse, with his highly strung nerves and quivering form, eager to do battle in the sport of kings, with the draught horse, of colossal strength, but using it to haul merchandise laboriously from point to point.

With vehicles of great carrying capacity, and that are required to travel only at a moderate rate of speed, I can conceive that the solid tire is highly suitable, particularly considering the fact that it has what the pneumatic tire lacks, a center of resistance and homogeneity of structure to sustain the power applied.

In these heavy vehicles having great horse power to propel them, an immense strain equal to the sum of the motive energy and the weight of the load to be moved, must be withstood by the pneumatic tire, intermediate its tread and the rim, so that it is easy to see the manufacturers are confronted with no easy problem in their endeavor to produce a serviceable article.

So severe is the strain to which these tires are subjected that it has the effect very often of ripping apart the plies of fabric and rubber of which the tire is composed and injuring it beyond repair. One reason of this is because the strain is localized, being limited to that portion of the tire which is, as it were, fulcrummed with the road, the other reason being that the column of compressed air contained within the tire forces no stable connection between opposite points of the tube's inner circumference, so that differential flexure is unrestrained, and immunity from wreckage can only be attained by making walls of immense strength, they being built up of numerous layers of fabric and rubber, all thoroughly united by vulcanization.

You may gather by these remarks that I am no believer in pneumatics for the heavier type of motor vehicle, say above 2,000 pounds in weight, since I consider the tractive strain which they must resist as undue in the present state of the art. That the pneumatic cushion is most desirable is evidenced by the fact that the heavy electric cabs which ply the city use them almost exclusively, notwithstanding their great cost, short life and excessive repair charge.

Solid rubber tires, on the other hand, while lacking the easy cushion of the pneumatics, yet being homogeneous in structure, distribute the tractive strain not only more widely over the tire, but also generally throughout the entire wheel, so that localization of strain is in a great measure avoided, wherefore solid tires, for commercial purposes, should in the main prove more generally satisfactory as applied to the heavier type of vehicle.

Cushion tires I personally consider a hybrid variety, which in effect may be likened to a cross between a balloon and a cannon ball, but minus the buoyancy of the one and the effective power of the other.

The cushion tire is a solid tire partly hollowed out, but the interior spaces being devoid of air pressure, and relying entirely upon the strength of their bridgements to prevent collapse. It is argued for them that the natural elasticity of the material employed returns the tire shape which has been momentarily altered in the act of rolling under the load. This is no doubt true to a certain degree, but those of you, gentlemen, who have had experience with cushion tires will bear me out that sooner or later a flattening occurs, and this flattening also comes in spots from the fact of the vehicle standing unused for a length of time.

In other words, the elasticity inherent in the rubber has a limited vitality, and rejuvenation by distension can only be accomplished through interior pressure.

The other day I was watching the process of electric welding performed by one of the solid tire makers in fastening their tires to the wheel rim. This process is most expeditious and satisfactory. The tire, in strip form, is provided with two longitudinal perforations, through which wire strands are passed, with their ends protruding. The tire strip is then placed about the wheel, being drawn and held thereover, with the opposite ends abutting. The rubber strip at one end is then crowded backwardly upon its wires, the wire ends are cut so that they just meet, insulation is applied, and by communicating a powerful electrical current through the machine jaws which grip the wire ends a perfect weld is effected in a very few seconds. The crowded up or compressed rubber end is then released so that it slips along its wires to effect a junction with the opposing end, and by means of a little cement at the joint this is rendered almost invisible. The wire core being drawn very tightly gives the tire a firm seat within its channel, and prevents creeping or longitudinal integral portion of the wheel. Without this wire reinforcement, or its equivalent, solid tires would have very little serviceability.

Solid tires are also made in endless form, and this type is slipped sidewise upon a felly and held laterally by means of plates or flanges placed at each side of the tire, and secured together and to the wheel by bolts passed through them and the felly. In some instances the actual width of the tire, at its seating portion is greater than the width of the felly, so that the act of closing the flange plates against the felly compresses the rubber, and sets up great frictional adherence to avoid creeping. All sorts of merits and demerits are claimed and disclaimed for different styles of solid tires, but it is not my purpose to treat of such, they being mere matters of detail.

Solid tires have unquestionably a large field of usefulness, and when their liability to chip out in chunks is lessened they will be better than they are now, and then it will be in order to look for further advancement. Some two or three years ago I suggested a use for solid tires that I believe was original. It was to take a strip of rubber, of the same length and section as the interior of your pneumatic tire, and carry it in your vehicle, where, in the form of a coil, it would occupy little space.

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In case of puncture you could enlarge the opening, insert one end of the strip and run it around inside the tire so that it completely fills the space intended for the compressed air.

By this means the tire stands up to the height as its mate, your steering is not affected, and you can get home without further injury to the tire.

I read of some one in England having recently used this device, which proves that they are not always so slow in the Old Country as they are reported to be.

If I am asked whether the enlargement of the puncture to admit this rubber strip might not be a more serious matter for the tire than to run it home flat, I should decline to answer, in the first place, because I don't know, and, secondly, because I don't wish to rob the poor repair man of his perquisites.

It seems to me, however, that automobilists have little use for a tire that goes back on them, for I believe that at least one vehicle in the hundred miles' endurance test on Long Island came home minus a refractory tire, unconcernedly leaving the offending member by the wayside, where possibly it reposes to this day. Should some wandering Willie chance upon it in his rambles, he might get inside and roll himself about—only then he would be still more ti—I beg your pardon.

Of course, you all know that pneumatics, both of the double tube and single tube types, have an inner or air tube. This inner tube is the heart of the tire and should be composed of the finest rubber, as it must contain the air pressure absolutely without leak.

In the double tube tire this inner tube is formed and vulcanized separately from the cover, which latter is not air tight, but is simply laced, clinched to the rim, or otherwise fastened to form an envelope.

By removing the tire from your wheel you can quickly open the cover, remove the air tube, repair it, and slip it back again, or you can insert a new tube and save time. Sometimes two air tubes are placed within the one cover, each having a separate valve, but only one being inflated. In case of that one being punctured, the other air tube can be blown up and no more time lost than is necessary for that operation. However, I do not know that this form of tire has met with much favor, so possibly it has not succeeded well in practice.

The single tube pneumatic, which is the most popular form in this country, has its inner or air tube vulcanized in with the fabric and cover, forming an integral structure.

The method of making these tires is very simple and doubtless not new to most of you; still I will describe it briefly for the benefit of those who have not yet had an opportunity of witnessing this operation.

A pole whose section corresponds with the required interior diameter of the proposed tire is provided and is wrapped to a length equal to the circumference desired with a strip of raw rubber of good quality to comprise an air holding tube, next several plies of fabric, as many as may be necessary to afford the proper strength to the tire, are wrapped around the air tube. This fabric is calendered or impregnated with rubber, so that it is really rubber cloth. The lug fastenings which you have noted on your tires for securing them to the rims, have base plates which are inserted within the fabric at this stage, an incision being made in the fabric to expose the lug.

The outer cover, being rubber compounded with other substances to make it durable, and incidentally to cheapen it, is then wrapped about the fabric. The rubber being raw, is in a plastic state, so that the edges adhere and lie snugly in position. A small tube of pure rubber and fabric called the valve stem is inserted in the air tube, and it extends outwardly beyond the cover.

The pole being withdrawn from the tire, the two ends of the latter are brought together and lapped to form a continuous tube; then some water is poured through the valve stem to form steam and into this valve stem what is termed a curing valve is inserted; the tire is inflated and is then placed within an iron mould formed in two halves and whose interior space is of exactly the proper dimensions and shape required. The mould parts being securely bolted together with the raw tire between them are then subjected to a heat of about 360 degrees for a period of about one hour.

This being done, the tire is completed, and the curing valve being removed, the usual valves are inserted in the stem and bound with wire. Of course, this process is varied by different makers, but in substance the steps I have described comprise the general method of making pneumatics.

Owing to the bugbear of puncturing, some manufacturers advocate the increase in thickness of the walls to an extraordinary extent, leaving a very small space for the air. They contend that such tires are absolutely safe, and still do have a pneumatic cushion, although much diminished.

While the first cost is more than that of the usual type, it would seem as though their duration should be greater.

Other tire makers resort to all kinds of methods of tread reinforcement to obviate the danger of receiving punctures. Some have increased the folds of fabric at the tread to minimize the chances of a sharp flint, nail, or other instrument of tire torture from penetrating to the air tube. Shellac and similar substances are used to make the tread impenetrable, and metal scales inserted between the layers of fabric have been used for the same purpose.

Means like these, while enabling a tire to resist attack, have usually nullified the effect of their penetration resisting quality from the very fact that such quality has been attained at the cost of rendering the tread stiff and unyielding.

However, much one may dread a puncture, it is evident that immunity from this scourge will not be purchased at the price of loss of resiliency. Were it sufficient to strengthen the tread or contact portion of the tire alone, the effect would not be so bad, because, while the side walls of the tire are left pliable, the air cushion is fully operative. As a matter of fact, the corners between the tread base and the side walls are the most vulnerable parts of the tire, because the flattening at the tread which produces these corners spreads them to form a widened base line and stretches them invitingly for attack.

To render the tire immune the armor should extend half way to the tire walls, and to so apply it would effectually destroy its other essential qualities.

A problem, therefore, confronts us as to how to assimilate the desideratum of a tread that will yield freely and that cannot be punctured.

I believe the solution of this problem lies in providing a tread armor in articulate form, so that while shielding the inner tube its ability to yield longitudinally is not impaired. You note the application of this principle in the tire having a band of wood vulcanized between the folds of fabric in the tread.

The band is composed of a series of flat members having concaved sides, pivots fitting between each pair of flat pieces to close the instices. This tread is quite flexible and does not detract from the resiliency of the tire, although as an armor it is difficult to conceive how its resisting quality can be improved.

In addition, this wooden tread band gives stability to the road contacting portion of the tire, whereby a predetermined width of contact provided in the moulding process will be maintained without deviation under varying conditions of load and degree of air pressure.

The lateral distension of the tire base by the wood members permits the side walls to lie in a vertical plane instead of being in rotund form, and thus are less liable to attack; wherefore these walls need no reinforcement and may consist merely of fabric with a skin coat of rubber, so that they may yield as freely as possible.

Tires need care and proper treatment like everything else, and will repay attention with longer service. You should watch the nut fastenings and be careful to replace the valve caps. These are little things, but their observance will avoid many a trouble. Above all, do not leave your machine standing for any length of time upon a deflated tire, as a good tire may easily be ruined in such manner.

It has occurred to me that much of the rubble, loose stones, broken bottles and débris met with in the roads, and which, if not avoided by careful steering, must be surmounted, might be turned aside from the path of the front wheels by individual pilots, depending from the frame just ahead of the wheels. The pilots could be obliquely arranged strips, pivotally and tensionally supported, so that should they strike a car rail or other immovable body they will be forced backwardly to clear it, and spring forward to the operative position again.

Such a device, if practicable, would certainly relieve the tires of a certain percentage of the enemies they encounter in their travels abroad.

I look to see experience at the hands of those operating automobiles bring out gradually all the defects, and they are the ones who can point out to skilled mechanics what might be done to improve the structure or arrangement just a little bit.

This idea may lie in the carburettor, muffler, radiator, steam engine, storage battery, or in the tires, but wherever it is found, please remember that none of us are here for ornamentation alone, and you may serve the interest of suffering humanity the world over by working out such improvements as may come to you.

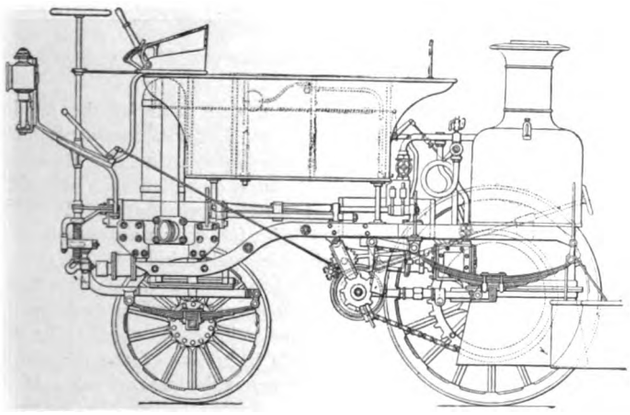
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I should also speak of rim cutting, which has been a cause of much destruction of tire property. This is a trouble which should never have occurred, for it can be so easily avoided by either slightly flaring the rim edges, or, better, by beading them.

It is a fact that when anything new is to be done, a wrong method is usually tried first, and the troubles met with are what finally turn us to the better way. It is my earnest desire, in which I am sure you all share, that in matters pertaining to the automobile we may jump ahead ten points at a time, for these present are precious years, and we want to have our pleasure out of this new means of locomotion right now, while we know our powers of enjoyment to be in full working order.

MOTOR STEAM FIRE ENGINE.

THE steam fire engine belonging to the Norwich Union Fire Insurance Company, and stationed at Worcester, has been recently converted from a horse-drawn engine into a self-propeller by Mr. Chas. T. Crowden, of Leamington. The conversion was effected while the engine was kept in service, and it attended several fires while the work was in progress. The original road wheels were far too light for motor purpose, and a new set of wheels was constructed under Mr. Crowden's patents, by which the spokes are set back at the hub, thereby ensuring safety against the great lateral strains to which motor wheels are subjected. The hind or driving wheels are fitted with star wheels and sprockets. A motion frame for carrying the crank shaft. Differential shaft and gearing was hung to the main frame, in front of the brake shaft by two special brackets and fixed by two bolts, these bolt holes being practically the only fresh holes made in the existing frame. The motion frame is attached to and can be removed from these brackets when required. Each end of the differential shaft is fitted with a sprocket pinion and connected up to the hind wheels by means of a pitch driving chain, which is adjusted by two setting up radial stays. To this frame is attached a double cylinder engine fitted with link motion, driving the double throw crank shaft, to one end of which is fitted a pinion driving the differential gear shaft to the ratio of 5.1 to 1. Steam is taken to the



MOTOR STEAM FIRE ENGINE.

propelling engine from the main steam pipe feeding the fire engine, and the exhaust is taken into the existing fire engine exhaust pipe; these pipes were made in such a form as to allow for a certain amount of spring when adjustments were made to the chains as the engine and motion frame move forward. The old hose box was removed and a water tank substituted having a seat and footboard for three men to sit abreast, and a fireman sitting on the top of the water tank with footboards as before. The center man or driver has full control and manipulation of the engine from his seat. An extra screw brake is provided as an emergency brake; it can be operated from behind by the stoker, the coal bunkers have been altered to give a larger capacity, and a seat is fitted for the stoker for firing en route. The boiler is provided with a detachable ashpan for preventing the hot cinders falling upon the road. The original forecarriage is used, a channel steel sector being fitted to the splinter bar by two stanchions, and a chain pinion attached to the vertical shaft gearing into a length of pitch chain fixed in the channel to serve the purpose of a rack. Should the motor part of the engine become disabled the motor engine and gearing can be easily removed by withdrawing a few bolts, and the engine used as a horse-drawn engine. The boiler, when the motor engines were used, was originally fed by an injector which was not altogether satisfactory, and a feed pump is now being attached, worked from the countershaft, also a special apparatus for filling the water tank from the river or roadside streams and other sources. The motor engine has proved itself very satisfactory up to the present, and will run on the level road at a speed of about twelve miles an hour, and will climb all the hills that have been met with up to the present, some grades of which in this district are very severe. It is stated that a very great saving will be effected by its use in Worcester, the horsing of the engine previously costing a guinea a mile, and the work being so severe that no one cared about lending their horses for the fine engine, which weighed about three tons when loaded with all its appliances and firemen. Often thirty to fifty minutes have been wasted in getting horses, which, when an alarm of fire was given, were at work at their daily duties. A considerable amount of time was also lost in finding the proper harness for them; the horsing of steam fire engines in country districts is a very difficult question. The motor after lighting the fire can be got away in about five minutes under its own steam. The speed of the motor is about twelve to fourteen miles an hour.—*The Engineer.*

AN IMPORTANT CIRCULAR LETTER.

HARTFORD, CONN., July 25, 1901.

GENTLEMEN—We desire to notify our customers in the automobile trade in general that we found that our well-known steering knuckles and axle ends, which have been on the market for the past year and are now in general use, were an infringement of United States letters Patent No. 442,663, issued December 16, 1890, and that we find upon investigation we would have been compelled to decline further orders for any and all forms of these steering knuckles and axle ends for use in motor vehicles, in view of the exclusive right and license for automobile purposes held by the Electric Vehicle Co. of New York, under this patent, the title of which rests with the American Bicycle Co., of New York.

In view of our extensive sales of these knuckles and axle ends for automobile steering equipment, we desired to be in a position to continue to offer such to our customers, and therefore entered into negotiations which have finally resulted in our acquiring from the Electric Vehicle Co. a license for the manufacture and sale of forgings which constitute parts of the invention covered by Letters Patent No. 442,663, and we now beg to offer to automobile makers who are licensed to manufacture and sell in their vehicles steering equipment as covered by the above mentioned patent steering knuckle and axle end forgings of the form we have advertised and sold, or any designs of such parts of steering wheel connections as come within the terms of the above patents.

Owing to the conditions as outlined above, we hereby withdraw all prices and quotations heretofore given on steering knuckles and front axle ends and will be pleased to quote new prices on application. We would also call the attention of our customers to the fact that if these forgings are purchased from us, in view of the royalty paid by us there will be a deduction from the full license fee required of the vehicle manufacturer.

Yours respectfully,

THE BILLINGS & SPENCER CO.

HAS A DE DION-BOUTON MOTORETTE.

PRESIDENT JONATHAN GODFREY, of the Automobile Club of Bridgeport, made a run from Brooklyn, N. Y., in a handsome 5 horse-power De Dion-Bouton motorette. The auto was in charge of little "Tommy De Dion," and a quick run was made from the factory in Brooklyn. The machine has attracted much attention, as it is the first of the kind to be owned in Bridgeport.

The Automobile Club of Bridgeport made a run to Green's Farms Saturday afternoon, June 26, and took dinner at the Beachside Inn. The club's new folder announcing the runs of the season is out.

THE WM. H. WEBSTER AUTOMOBILE CO.

THE Wm. H. Webster Automobile Co., Wm. H. Webster, manager, announce the opening of a salesroom and repository at 8-10 West Sixtieth street, New York. They would be pleased to demonstrate to you, by a road test, the practicability and general excellence of the "Milwaukee" steam carriage. All kinds of automobiles repaired, stored and kept in order.

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THE CRESTMOBILE.

(See "Latest Styles.")

ONE of the interesting developments of building a reasonable priced automobile is the type of light runabout which has been designed and being put on the market by the Crest Mfg. Co., Cambridge, Mass. This company has been very prominent in the last two years, introducing a type of air-cooled motor of their manufacture, confining themselves to motors for automobiles. They have now decided to manufacture an automobile of the light "runabout" type, confining themselves to this form of vehicle, preferring to concentrate their efforts in the construction of one perfect design than to build the heavier and more elaborate vehicle. The public now recognizes the advantage of a light carriage for an automobile, and several prominent manufacturers are now introducing vehicles of this class. It is well recognized that a vehicle light and flexible that will absorb shock rather than transmit it through some heavier part of the frame to the weakest part, is what is best adapted for the kind of roads used in this country.

The carriage of this type is practically an American institution, being universally used in this country for pleasure vehicles. It is especially adapted for automobile work over any form, as it has the greatest amount of strength with the least weight, which is an exceedingly important consideration, as it means with an automobile built on the plan less motive power can be used, and advantage taken of the simple, air-cooled gasoline motors, getting rid of a large amount of extra machinery, as used by the water-cooled motors; the weight per horse power being the same as for the larger and heavier types of vehicles. Another advantage that comes from a carriage of this design, being used universally for pleasure carriages, horses are not so likely to be frightened as they are with other forms of unfamiliar carriages when used as an automobile, as it is well recognized that until automobiles become more common the closer you follow existing types of carriages the more it will do towards preventing uneasiness amongst animals.

These carriages are fitted with a Crest 3½ horse power motor, which, with the carburetor and muffler, is placed on the front axle, the best position to get the air that keeps the motor cool, and at the same time all vibration is eliminated from the carriage, and the weight of passengers and machinery is equally distributed on all four tires, making the wear even. From the sprocket on the motor a chain is run to a transmission placed on the reaches. From the transmission another chain runs to the compensating gear on the hind axle. Chain drive being adopted on account of the least cost of maintenance and being noiseless. By this plan a very simple arrangement of mechanism is made, reducing the friction to a minimum. The gasoline tank, which is placed underneath the seat, holds sufficient gasoline for sixty miles. Under the seat are also placed the batteries and induction coil. The speed regulator gives a good range of change of speed, and the general arrangement makes this type of automobile very satisfactory, meeting every requirement needed in an automobile, at a price that everybody of ordinary means can procure.

The carriage weighs a trifle over 400 pounds, and it will be noticed that the horse power is equal per 100 pounds weight to any of the high powered automobiles. The carriage is speeded as requested by the purchaser. On account of the small horse power needed for a carriage of this type it uses less gasoline than will be ordinarily used for an automobile. Every part of this carriage is interchangeable, insuring quick repairs, a very important consideration in an automobile. The Crest Manufacturing Co., Cambridge, Mass., invite inspection of their product or will send circulars at request.

CROWDEN'S STEAM WAGONETTE.

(See "Latest Styles.")

THIS steam pleasure carriage is built by Charles T. Crowden, Leamington, England. Its motor is constructed upon the same general lines as that of the Crowden four-wheeled dog-cart, illustrated in a prior number of THE HUB. The fuel is petroleum, electric ignition. It is fitted with Crowden's patent differential gear. The vehicle is provided with three speeds and a reversible gear. The construction is strong and as light as is consistent with strength and durability.

DURYEA POWER CO., INC., SURREY.

(See "Latest Styles.")

THE Duryea Power Co., of Reading, Pa., are building a four passenger surrey, with child's seat and box in front, one of which has recently been turned out. This machine has their regular triple cylinder motor and transmission gearing, the only difference from their regular machine being that such parts as wheels and axles are made heavier to meet the heavier load. This machine will carry four people up a 12 per cent. grade on the high speed, and will make twenty-five miles per hour on good roads. It is low and long, which makes it very steady to steer and very comfortable to ride in, the total weight without fuel and water being about 900 pounds. It is equipped with their one hand central control, and is pronounced by all who have seen it one of the finest family motor carriages yet shown. It is quite simple in construction, all parts are large and durable and there are no batteries, switches, gauges or stop cocks to give one worry or need attention. The control is so easy that a lady may drive this vehicle anywhere.

GROUT BROS. MOTOR VEHICLES.

(See "Latest Styles.")

WE publish this month three illustrations of the Grout Bros. motor vehicles, each of which is of special interest. The fire chief's wagon, with its three riders, has a seat facing to the front wide enough for two persons, the one facing to the rear being for one. The second vehicle is a dos-a-dos, full size for carrying four persons. The foot board can be closed up when no more than two passengers are carried. The delivery wagon is an illustration of one of twelve built for the Whitman Grocery Co. It is designed for light and quick service; the carrying space is 3 ft. in width, 3 ft. back of the seat and 3 ft. 6 in. high. The doors are at the rear. These vehicles have steam power, and all have the special features that go to make the company's motors a success. The company's works are located at Geneva, O.

THE LITTLEST AND THE LARGEST.

(See "Latest Styles.")

THE smallest automobile ever built is that made by the Jenkins Automobile Company, of Washington, D. C., for Chiquita, the little 26-inch atom of humanity, who is now using it at the Pan-American Exposition. It is a little electric Victoria, complete with top, electric lights and gong, fenders and wheel-steering gear. It is, in fact, so exact a miniature duplicate of a full-grown automobile that it is difficult to fix its real proportions in one's mind. It has 12-inch wheels, fitted with 1¼-inch diamond pneumatic tires; electric lights showing red and green on the sides; a top which raises and lowers; leather fenders over all four wheels. The cushion is 14 by 8½ inches. From the step to the ground 4 inches, and from the seat to the ground 14 inches. The front and rear axles are 24 inches apart, center to center, and the tack 24 inches wide. With the top up it doesn't come up to one's elbow. It is guaranteed to run for two thousand hours with absolutely no attention except that required to guide and control it. The motor is hung beneath the body on the truck and connects with the gear on the differential directly on the rear axle. Both rear wheels drive.

While the little machine is suitable to use in the streets, it is unequaled for stage or indoor use, kindergarten or nursery. There's no fire, water or boiler; no gasoline or other explosive or inflammable compounds; no acid or heavy lead batteries. It requires no expert attendant—a child can use it as safely as a bicycle. Some idea of the size of this little machine can be had from the photograph showing it standing beside the wheel used on a big steam coach made by the same company.

THE THORNYCROFT LURRY,

(See "Latest Styles.")

THE heavy wagon, or, as known in England, lurry, is from a photo forwarded us by the Thornycroft Steam Wagon Co., Ltd., of Cheswick, England, which illustrates the heavy lurry which was awarded

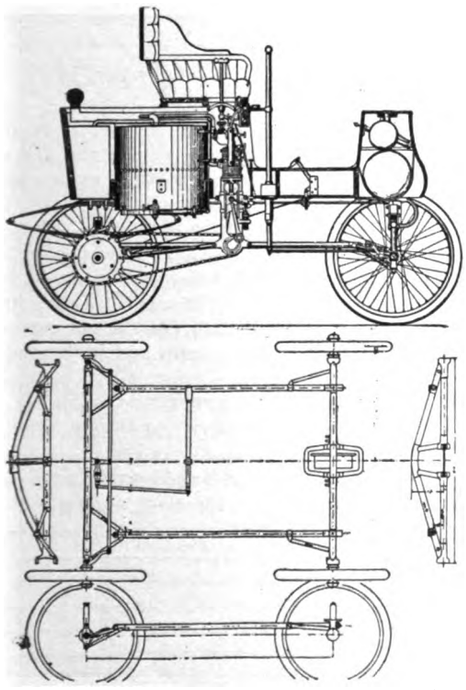
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the gold medal in the heavier class at the Liverpool trials in June last. It differs in all its essential features from any heavy vehicles built in this country, except by the American branch at Paterson, N. J. It is a steam power machine, and in its competition trials and elsewhere has demonstrated its ability to convey heavy loads, and its ease of control.

GENEVA AUTOMOBILE & MANUFACTURING CO.

THE Geneva Automobile & Manufacturing Co., of Geneva, O., have made rapid strides since organization. They have had their wagons running for the last month, have thoroughly tested and perfected the little matters of detail, and are now delivering with reasonable promptness. The entire wagon is full of original ideas. In the body, the conventional dash belonging to the horse-drawn vehicle is done away with, and the front end so constructed that there is ample room in same for the air and gasoline tanks and tools, thus removing the gasoline tank away from proximity to the fire. By putting a back rail and cushion on the front, it furnishes an extra seating capacity.

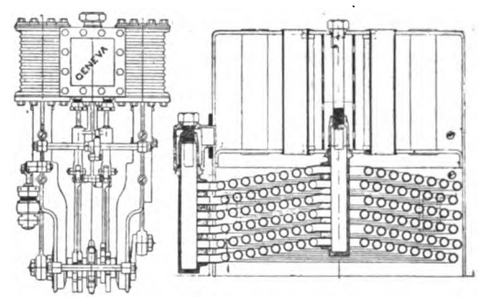
The boiler is of the water tube type, holds six gallons of water when charged for working. The boiler shell is 17 inches in diameter and 17 inches in height, with a crown sheet riveted in 9 inches from the top, leaving a suitable water chamber. There are sixteen flues, 1¾ inches in diameter, passing from the crown sheet to the head through the water chember. Underneath the crown sheet are six coiled tubes made of ⅝ inch No. 16 gauge cold drawn seamless steel tubing, with 17 feet of tubing in each coil, pinned and brazed to a header or manifold at the center and a header or manifold on the outside of shell, there being a slot in the shell for the tubes to pass through to the outside header. The intake of water is at the bottom of the outside header. Water is circulated through the tubes rapidly and discharged into the water chamber above the crown sheet through an opening in the center header. These headers are each held in place by a bolt which can easily be removed if desired and the entire coils taken out. In this construction of boiler the expansion and contraction is taken care of in such a way that it has been found by numerous actual experiments that the water can all be evaporated from the boiler, the coiled tubes heated to a cherry red, without injury to the boiler; so that if anything happens to the pump through carelessness or oversight, and the water is allowed to evaporate, the wagon will come to a standstill, but steam



SKELETON SHOWING BOILER AND ENGINE, GROUND VIEW OF GEAR.

will be generated and started quickly as soon as water is again put into the boiler. An auxiliary hand water pump is provided which can be worked from the seat without inconvenience or without stopping the wagon.

The engine is of the marine type, double cylinder, 2⅞ inches bore, with 4-inch stroke, developing fully six horse power. The throttle and reverse levers are combined in one, worked from the center of the seat, so that the driver can ride on either side. The steering post comes up in the center just forward of the seat with a lever which can be reversed and the wagon steered from either side of the seat. The burner is started with four-pilot light, so arranged that if there is any drip from the gasoline, it drops on the ground and will not burn back or flash up. The flame of the pilot light heats



ENGINE AND BOILER.

the vaporizing coil for the main burner and is kept burning at all times while the wagon is being used. The fire is controlled by a Locke regulator, which works automatically and holds the steam at a steady pressure.

The main journals and eccentrics to the engine are all ball bearing. Ample provision has been made for oiling. The steam exhaust is muffled, practically noiseless and with but little show of steam.

The running gear, while made so as to be very flexible, is staunch and will stand very hard usage. The compensating gear in the rear axle is held in a stiff, staunch forging, which keeps the gears in perfect alignment at all times. For fuel, ordinary gasoline is used, which is carried in a tank at the front of the wagon, the tank having a capacity of nine gallons. The burner is cast with a large percentage of aluminum, making it a long lived burner, and being economical in consumption of fuel, taking but a comparatively small amount of heat to generate and keep up the required amount of steam, it has ample capacity for eighty to 100 miles. The water tank is made of copper, at the rear of the wagon, coming forward on two sides of the boiler, carries thirty-one gallons, sufficient to run fifty miles. All little details have been carefully looked after, and simplicity in construction together with practicability and durability has been the aim of the company in making a wagon that should be equal to anything yet produced. One hundred of these wagons are well under way. Deliveries are now being made.

THE AUTOMOBILE IN EXTREME WEATHER.

THE great heat of the past few weeks has brought permanently before the public one feature of the motor not fully appreciated by the public at large, viz., its ability to give most satisfactory service in both extreme hot and extreme cold weather, when horses suffer from the temperature and when horse driving is no longer a pleasure because of the limitations of the horse. In hot weather a trip through the country on a high speed motor vehicle creates a cooling breeze or a rushing wind at will, while carrying the driver past the most pleasant scenery at a rapid speed and without exertion. Further, there is no worry or sympathy expended on the tired and perspiring horse, for the motor works as well when hot as when cold and returns from a long run with as much vigor os when starting out. Only those who have tried the delights of motoring in a first-class vehicle on a scorching hot day can appreciate the pleasure of gliding through the country fast or slow at will, changing direction by a slight inclination of the steering lever and varying the speed by an imperceptible twist of the wrist. The up to date, modern motor vehicle is almost as magical as Aladdin's lamp, and produces an exhilaration surpassing that of coasting on a sled or cycle, much superior to yaching or coaching, and the nearest approach to flying yet produced.

Not only is the motor vehicle a godsend in the unbearable hot weather, but it opens up an entirely new field of pleasure in the winter. With ample power it can traverse deep snow, and the hard frozen roads make the best of surfaces. The machinery is un-

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affected by the weather, while the passengers may be made comfortable at any temperature by enclosing the carriage and heating same with the exhaust gases or by the use of warm lap robes and wind proof aprons, together with heated foot mats, sending an agreeable glow upward through the wraps and the entire body. The ability of the motor vehicle in snow has been demonstrated many times in this country. The first motor vehicle race in America, held at Chicago on Thanksgiving Day, 1895, covered a course of more than fifty miles through snow a foot deep with a frozen crust on top strong enough to support pedestrians, which exhibition settled once and forever all question as to the ability of motor vehicles to traverse snowy roads. Many other instances of the motor vehicle's ability in snowy and icy weather have been given since, and it is amply proven that a motor vehicle can travel at much faster speeds than a horse and give a pleasure to winter driving not heretofore known.

AUTOKNOW.

ENDURANCE TEST FOR AUTOMOBILES.

THE Automobile Club of America has made public the conditions under which the 500-mile endurance contest will be conducted. September 9 is the date set for beginning the contest, and the route to be followed is from New York to Buffalo. The start is to be made on Monday morning, and the contest is to be finished on Saturday evening. The club announces that the race is not to be a speed contest, but a trial of the good qualities of the machines entered.

The contest is open to all classes of self-propelled vehicles made in the United States or abroad, but no manufacturer, agent or private owner will be allowed to enter more than three vehicles in any one class.

Entries will be received on regular blanks prepared for the purpose up to August 31, and must be accompanied by full information concerning the vehicle. The entrance fee for all classes, excepting motor cycles, is $50, and for motor cycles $25. These fees will be accepted up to August 15. After that date 10 per cent. will be added to the fees for all classes.

TWO PASSENGERS ONLY.

The rules provide that each vehicle shall carry two passengers, and that stewards be stationed along the route to control the speed of the machines. The contestants must keep to the right and comply with the traffic regulations of each town through which they pass. If a contestant fails to stop his vehicle on request from the driver of a frightened horse, or in any manner shows himself inconsiderate of other users of the highway, his vehicle shall be subject to disqualification.

During the continuance of the contest the start will be made at 8 o'clock each morning. An hour and a half will be allowed for lunch. All meals will be had at "controls," which will be established by the committee having the contest in charge at regular intervals along the route. Elaborate preparations have been made for these "controls." There will be found shelter for the contestant and his machine, and all necessary supplies. The "controls" will be designated by two red flags and the approach to them marked by a green flag or light.

Red, green and white flags and lights will be employed to control the vehicles, just as they are used on railroads to govern trains. A green flag will mean that speed must be reduced and caution observed. A white flag will mean that the road is clear and speed may be resumed. When a red flag or light is seen on the road it means that a full stop must be made immediately.

MUST CLIMB HILLS.

The first stage of the contest will be from the club house to Poughkeepsie, a distance of ninety miles; the second from Poughkeepsie to Albany, seventy miles; third, from Albany to Little Falls, eighty-five miles; fourth, Little Falls to Syracuse, eighty-five miles, fifth, Syracuse to Rochester, ninety miles; sixth and last, Rochester to Buffalo, eighty miles.

The run will include a hill-climbing contest near Little Falls.

CENTURY STEAM CARRIAGE.

THE Century Motor Vehicle Co., of Syracuse, N. Y., manufacturers of the Century steam carriage, have issued a descriptive illustrated catalogue, regarding the vehicle manufactured by them. If interested in motor vehicles send for a copy.

USED THE LOCOMOBILE.

VICE-PRESIDENT LOUIS CASSIER and Treasurer T. E. Griffin, of the Automobile Club of Bridgeport, carried the club pennant in the invitation run of the Massachusetts Automobile Club from Boston to Sharon, June 17. Mr. Griffin also took several prizes in the races of the Automobile Club of New England at Brookline, Mass., June 17. He used a locomobile.

AUTOMOBILE CLUB OF BRIDGEPORT.

SECRETARY F. W. BOLANDE and Geo. W. Hills, of the Board of Governors of the Automobile Club of Bridgeport, Conn., sailed for Europe on the "Vaderland," June 26. They expect to visit France, Switzerland, Italy, Austria, Germany, Holland, Belgium, England and Scotland during their two months' trip. They will have an eye out for the various types of automobiles to be found in foreign cities. On their return they expect to find ready for them the machines ordered of the United States Long Distance Antomobile Co.

LEAGUE OF AMERICAN AUTOMOBILISTS INCORPORATED.

ARTICLES of incorporation of the League of American Automobilists, with principal offices in New York City, were filed with the Secretary of State on July 12. The league proposes to foster the automobile industry in the United States and Canada, to bring about a moderation in cost for its members in the purchase of automobiles, to maintain a club house in New York City, to encourage the construction of good roads and to secure rational legislation regulating the use of automobiles. The directors are William Herbert Smith, William G. Kinney and William J. Howey, of New York City.

THE HIGHWAY LAW OF 1890 THE LAW TO-DAY.

THE Appellate Division of the Third Department has rendered a decision in effect declaring that the highway law of 1890, which compels persons operating a vehicle propelled by steam to send a messenger one-eighth of a mile in advance to warn people of its approach, applies to automobiles. If this decision is sustained by the Court of Appeals it will practically kill automobiling until such time as the Legislature can amend the existing law. That the statute was intended to apply to such vehicles as steam rollers, agricultural machines, etc., and not to automobiles is obvious, the automobile being unknown at the time the law was enacted.

A GOOD OFFER TO AUTOMOBILISTS.

REMINGTON AUTOMOBILE AND MOTOR COMPANY is now located at Utica, N. Y., where they have excellent facilities and are driven with orders. They say: "We are repeatedly asked if we are going to take part in the coming long distance automobile test or endurance run. We are entirely too busy manufacturing motors and complete vehicles to fill our orders, to permit us to take any of our production for this endurance test, though we desire to assist to make the same a success in so far as we can, and as Utica will be one of the principal stopping places, we would like it known to the trade that our entire plant will be placed at the disposal of any contestant who finds himself in trouble upon his arrival in Utica."

PRICES OF "LOCOMOBILES."

THE following price list of Standard "Locomobiles" will go into effect August 1, 1901:

Style No.	2	$850
Style No.	2½	900
Style No.	02	950
Style No.	3	950
Style No.	03	950
Style No.	003	1,100
Style No.	0003	1,100
Style No.	5	1,200
Style No.	05	1,400

THE man who has not one-half of his stock paid for is an unsafe customer, provided he has no other available means.

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Items of Interest.

AMERICAN MACHINE TOOLS ABROAD.

AMERICAN screw machines are stocked and sold by dozens of British agents in London, Birmingham, Manchester, Glasgow and other big cities. Many hundreds of them are found in British shops. They are being imitated by our manufacturers and in nearly every Continental country, copied, in some cases, very closely; in others, with variations. But the American machine still holds its place by very long odds. In turret machines several tools are caused to operate in rapid succession on a piece of work by the turret, or capstan—a device which is applied to turning lathes and to screw-making machines. In place of the single tool used in a common lathe, six, eight, ten, and in a few instances as many as twenty tools are taken in charge by a revolving turret which brings them round, each to fulfil its own proper function at the exact instant when it is required to come into action. Each tool fulfils its own distinct duty. and the result is, that when the turret has revolved once, a single article of manufacture will have had the half-dozen, dozen or more separate cutting operations performed on it necessary for its completion. In some instances two separate pieces will be produced during a single rotation of the turret.

This device also originated in America previous to the middle of the last century, and that country reaped the solid advantages of its successful employment for many years before British firms saw much in it. When the manufacture was at last taken up in Great Britain, it remained in a crude form, while American firms still went on improving until they made the movement of the machine wholly automatic. Now many British firms are wisely following that example with beneficial results. But here also much leeway has to be made up.

A milling machine is one in which rotary cutting tools are employed, improved and developed in scores of forms, it is the most important machine tool, the lathe excepted, in the American shop. Two years ago most British firms looked askance at the milling machine; it is even now distrusted in some of our shops. Even in many of those where it is appreciated and used it is not employed to one-half, indeed, one-fourth, of the extent to which it might be with advantage. Thousands of these machines have come across from the United States, and hundreds, modeled on identical lines, are being made to-day and offered for sale by British tool makers.

Machines, too, for grinding tools, gauges, and the finest class of work to precise dimensions were developed in America long before British firms took up their manufacture. The wonderful precision of these machines is such that it is easy to grind work on them definitely within a thousandth part of an inch, and less, to actual measurement. The spindles of many rotate at speeds ranging from 10,000 to 30,000 times a minute. In some specially fine machines they will make 100,000 revolutions in a minute. And some of these highest American types are not yet copied here. When a British shop is advanced enough in its ideas to require such machines the order goes to America.—*An Englishman in Cassier's Magazine.*

TIMKEN ROLLER BEARINGS.

THE Timken Roller Bearing Co., of St. Louis, Mo., have gotten out a most telling catalogue in connection with the Timken roller bearings. In addition to the illustrations showing these bearings in different phases, they have a series of half-tone reproductions of vehicles equipped with their bearings, twenty-three in number, and on the opposite page fac-simile reproductions of testimonials of the owners of various vehicles. These, in addition to the expressions of opinions and the object lessons given by the illustrations, show the range of vehicles to which these rollers are applicable. There is the buggy, surrey, omnibus, hansom, light and heavy delivery wagons and trucks. No better evidence can be produced of the broad range of these bearings and their fitness for all uses. Certainly we have seen no proofs of merit more convincing than what are given in this catalogue.

WE measure time by actions, by *heart throbs,* not by figures on the dial.—*Bailey's Festus.*

OFF FOR EUROPE.

MR. H. A. HIGGINS, the general manager of the Standard Tool Co., Cleveland, O., sailed for England May 15, to visit the foreign representatives of his company in England, France, Germany, Russia and Scandinavia.

COLD DRAWN STEEL TUBING.

THE introduction of the automobile, together with the skeleton gears for sulkies and carriages, led to the use of materials heretofore almost unknown in the building of carriages. Among this tubular steel takes a pronounced lead. Its value for automobile frames and axles for sulkies and light carriages was immediately recognized by our most advanced builders, who made demands for it. The bicycle had prepared manufacturers to meet this new call from the carriage trade, as plants had been built, and the most modern appliances for the manufacture of tubes put in, although in the early days of bicycle manufacture our people were dependent almost entirely upon English producers for tubular iron and steel of suitable character for vehicles, but it was not long before the American manufacturer was able to produce tubing that drove the foreign article from the market.

Following the bicycle come the bike sulky, in which tubular axles were first used in carriages so far as we can learn. Then the light runabout and the automobile, which at once opened a new field, one that called for a superior article, an article in which was combined the maximum of strength with the minimum of weight. These qualities were attained by the Shelby Steel Tube Co. in their cold drawn steel tubing, a line of highly finished tubes of different degrees of temper to admit of their being used straight or bent to different shapes. With the bent axles for carriages now so popular, and automobile frames, the ability to procure tubing suited to so great a variety of forms is an advantage that is greatly appreciated by carriage and automobile manufacturers, and we may confidently anticipate an extended use of tubing in vehicle construction.

The Shelby Steel Tube Co. are noted as manufacturers of steam boiler tubing. These tubes have been adopted by the United States Government after exhaustive tests, as well as by locomotive builders and others, but demands from other sources caused the company in May last to organize a new department for the handling of bicycle, automobile and carriage tubing. This department will be called the Vehicle and Specialty Department of the Shelby Steel Tube Co., and will be under the personal supervision of Edward K. Orr, who for the past four years has been western manager of the company, with offices located in Chicago. The Vehicle and Specialty Department has already established offices at No. 258 Broadway, New York, for the handling of the Eastern business, and in the Rookery at Chicago for handling this trade in the West. Both of these offices are operated in connection with the general business of the company, but on account of our very large and rapidly increasing automobile and bicycle business, it was found necessary to organize a special department to give this trade the attention it merits. In connection with this department, specialties of many different kinds will be manufactured, The company are experimenting with tubular wheels, and in addition have placed on the market a large line of specialties for automobile and bicycle purposes. They have recently installed large nickel-plating and enameling facilities, and have increased their capacity to such an extent that the output of any specialty of which they may take up the manufacture will be almost unlimited.

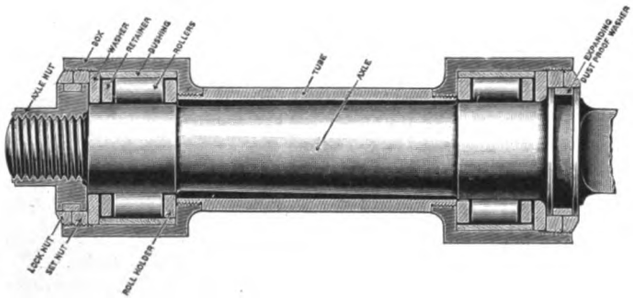
Running gears made from seamless steel tubing are rapidly gaining in favor with the manufacturers of all kinds of vehicles. Seamless steel tubing was first used in vehicle construction by the manufacturers of track sulkies, and on its adoption later by numerous manufacturers of light carriages and the automobiles, its use is becoming universal. At the present time progressive manufacturers of every style of vehicle are finding uses for seamless steel tubing not before contemplated. Many of the manufacturers do not appreciate or understand what seamless steel tubing is at the present time. They confuse it with ordinary pipe, whereas the greatest difference exists between the high quality seamless steel tubing and the ordinary iron pipe as manufactured by the lap weld pipe makers. Seamless steel tubing is made from the very best quality of open hearth steel; it machines readily and cuts free and clean. Special tubes can be burnished, soft annealed, suitable for bending or forming into shapes, and owing to the very smooth finish and very slight variation in diameter and gauge, the cold drawn steel tube can often be used to advantage and with economy in place of an article that ordinarily ma-

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chines from solid stock. Owing to the great strength and superiority of this tubing, a much lighter vehicle can be obtained by its use than by the ordinary method of construction. The company recently placed on the market the Shelby Automobile Boiler Flue, which is rapidly gaining in popularity with the manufacturers of steam vehicles. To produce an article adapted to this purpose necessitated additional facilities and expensive equipment. They claim to be able to manufacture an automobile flue superior to anything that has as yet been put on the market, and notwithstanding its increased cost, are furnishing it in competition with the highest grade of copper flues.

THE BANTAM MANUFACTURING COMPANY.

THE Morse Roller Bearing Axle which is being manufactured and sold by the Bantam Manufacturing Co., of Bantam, Litchfield Co., Conn., is growing in popularity with a rapidity that is very gratifying to the officers and stockholders of the company, which was organized only last November. The company is now booking orders for ten different sizes of the axles from ⅞ inch to 2¼ inch, and can make prompt delivery on most of the sizes, a fairly good record for less than six months' actual operations. The chief points of superiority claimed for the Morse Roller Bearing Axle are simplicity, strength and durability. The axle forgings are made for the company by the Sheldon people, of their special material, and the bearings are of selected steel, hardened by special process. It will be noticed from the subjoined cut that the bearing surfaces of the axle are parallel, not tapered, which the makers claim adds much to the strength. An expanding dust proof washer is used to exclude dirt and grit, and at



THE MORSE ROLLER BEARING AXLE.

the same time keep the bearings well lubricated for months at a time without special attention. The superintendent of the company, Mr. A. J. Morse, was formerly of the Morse-Keefer Co., of Salisbury, Conn., which concern was absorbed by the Standard Spoke and Nipple Corporation. Mr. Morse, although still a young man, has taken out some sixty patents, many of which are improvements in machinery which have proved of great value. In regard to the axles the company says that the best recommendation they have is the fact that parties who have tried them are ordering more, one of the largest rolling mills in the country having ordered three sets after a thorough test of the merits of the axle. The company is also making a Roller Bearing Fifth Wheel which differs from most of the anti-friction fifth wheels on the market in that the rollers are inserted in slots or pockets, and are not held in position by pins. The makers claim for their fifth wheel that it is the strongest and most durable of the kind. The plant of the Bantam Manufacturing Co. is admirably located on the outlet from Bantam Lake, a noted summer resort and the largest sheet of water in the State. The water power is regarded as one of the best in southern New England, and the company has developed about sixty horse power for present requirements. Bantam is also the seat of the flourishing carriage manufactory of Flynn & Doyle, who have been well known to the eastern trade for the past twenty years.

GLASS BENDING.

THE American Glass Bending Works, M. A. Smith proprietor, is a most desirable place in which to get glass bending done for carriages, etc. Mr. Smith is skilled in the industry and can give the best of results at prices that are just and equitable to all. You have but to send frames to be fitted or patterns of forms, and Mr. Smith will guarantee satisfactory results. He also bevels and otherwise prepares glass for special purposes. The company's address is 86 Chambers street, Newark, N. J.

THE DIAMOND RUBBER CO.

ALL who have had occasion to do business with the Diamond Rubber Co., of Akron, O., know how careful and business-like their methods and how neat and attractive everything is that comes from their hands, and are therefore not surprised to find them sending out one of the most artistic catalogues that has been issued by manufacturers of materials for automobiles and carriages. It is printed in colors on fine paper, and illustrated in a highly attractive manner. We advise those interested in rubber tires, as well as in fine catalogue work, to send to the company for a copy.

TRADE WITH ITALY.

UNITED STATES CONSUL JARVIS, Milan, Italy, says:

"The great mistake of many American exporters has been to consider Italy as not worth dealing with directly. It should be remembered, however, that Italy has certain industries which necessitate the use of much material and many tools. Among other things that are made and exported are all kinds of engines, boilers, motors, railway cars, electric machinery, etc. If our houses wish to supply this country it would be advantageous to deal direct. The custom of giving to some European firm the control of the whole of Europe is not always beneficial. One of the best known firms in the United States is represented in France and Italy by a house in a small French town, and though the articles in question have a good market in Italy, not one of this particular make has been sold here."

The Consul says that Italy is a difficult market on account of the conservatism of the people, the distance from American ports, etc., and our manufacturers should make extra efforts to win the trade. To show what can be done by enterprise and willingness to please the consumer, Mr. Jarvis quotes the following instance:

"A traveler from the United States came here, and by sheer persistence induced a firm to take the agency of an American article, the sales of which had hitherto been on an average one a year. By a concession as to credit and a reduction of the order the agent undertook to push the sales. The catalogue of the American house was printed in green, on yellow paper; the agent at once got out an Italian catalogue, adapted to Italian taste, with the result that before the term for payment expired two large orders had been passed to the manufacturers. Had the sale of goods depended on the original catalogue, or had they insisted on doing business in their own way, the sales of the article would have continued at the rate of about one a year."

*PORT CHARGES IN VENEZUELA.**

CONSUL GOLDSCHMIDT transmits from La Guayra translation (made by Consular Agent De Sola, of Caracas) of a decree dated June 3, 1901, respecting sums to be paid by vessels required to work overtime in discharging and receiving cargo. This decree, which Mr. Goldschmidt says will greatly facilitate commerce, provides:

The loading and unloading of steamers having a fixed schedule shall be attended to by the custom houses of the Republic from 7 to 11 A. M. and from 12 M. to 5 P. M., and when such steamers need to work overtime (after 5 P. M.) to be able to sail the same day, the custom houses shall grant an extra half hour's work, in which case the agents of such steamers will pay the employees detailed to attend to the clearance after the official hour the sums expressed below, the same being the amount of one day's wages of the number of employees considered necessary to properly attend to the said clearance; the charge for overtime shall be:

	Bolivars.	
At La Guayra and Puerto Cabello	150	= $28.95
At Maracaibo and Carupano	125	= 24.13
At other custom houses	100	= 19.30

An amendment to the above, dated June 19 (transmitted by the consular agent), prescribes that the steamers shall receive attention by the custom houses of the Republic from 7 to 11 A. M. and from 12 M. to 4.30 P. M., and that when they need to work after 4.30 P. M., the custom houses shall grant one hour's overtime, which will be paid for as above described, even if only a part of the hour should be required.

* A report covering the same subject-matter has been received from Mr. Russell, secretary of legation at Caracas.

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DANGER SIGNALS IN CREDITS.

BY CHAS. D. WETTACH.

It is remarkable how some customers pay their accounts with one firm and how lax they are in settlements with others. A few days ago an order was received from a dealer in New York State who gave two references. One stated that the party in question had been dealing with them for five years or more, was satisfactory in his accounts, and that they extended him a liberal line of credit and considered him good for his wants, was conservative and used good judgment in buying. The other party referred to stated almost the opposite by saying that, although the applicant had been a customer for some little time he was invariably slow, owed them for an account many months past due, which they were trying to get settled, but believed him responsible for a small amount. Now, then, when information of this kind comes to hand about the only thing you can do is to try to guess which will strike your case, and if the mercantile agencies can give you a little better information than the last reference, undoubtedly you will grant the credit. Then you will watch that account for a long time, and if he orders any more goods you will become suspicious of him, and when his account becomes due and he does not pay it and fails, you will say, "Just as I thought it was."

It also appears that where a customer has been dealing with a house for many years and has recieved various accommodations in the way of renewal on notes, he frequently becomes careless, and thinks that the money which should go to pay his maturity paper can be applied to other sources without asking the consent of his creditor, and takes it as a matter of course. This method of juggling with money belonging to the creditor should be stopped in its incipiency, as, if it is allowed to continue, the creditor will always be the loser. In this respect it may be wise to quote an actual experience regarding a customer who at maturity of his account gave notes. At maturity some of the paper was paid, others in part, and some renewed in whole. It so happened that a note which was renewed in part, through some error of the bank, was presented at the debtor's bank for payment and was paid; after a week had passed it was brought to the notice of the debtor, who knew nothing of the payment until notified; then, of course, followed demands for an explanation, which naturally appeared rather lame. At any rate it made a customer who will not ask for unnecessary accommodations.

The debtor who is accustomed to the drinking habit is the one who must be looked after quickly, as it is an undoubted axiom that he will neglect his business affairs, and when such knowledge comes to the creditor it is important that credit be withdrawn and the account closed as quickly as possible, otherwise it will prove costly. In this connection it may be related that a few weeks ago, having sent a new salesman over a portion of territory in which was located a customer who formerly had met his obligations as promptly as could be expected, the salesman learned that the debtor was accustomed of late to frequent the hotel bar and neglect his affairs, the result of which was the bank from which he had a small loan refused to renew it because of his habits, which were becoming very loose. The result was that an assignment took place, and a few creditors are mourning for the payment of their accounts that will never come to pass.

So that, in conclusion, it will be observed that the debtor who uses the money or goods belonging in whole or in part to another in any but a legitimate way is very liable to undermine his reputation, and the result will be financial disaster.

In this period of our civilization, where trade is the result of close margins of profit, more the result of opposition that competition, the qualities of integrity and stability are those which make a good, substantial and profitable customer.

ANTI-CANDLE.

The English & Mersick Co., of New Haven, Conn., ever on the alert for improved appliances for carriages, have brought out the Yankee Patent Anti-Candle, a burner for carriage lamps, so constructed as to avoid entirel- the dropping of the wick though jolting; to be used in a carriage lamp in precisely the same manner as an ordinary candle, and to be filled with kerosene oil. One fill of oil burns fourteen hours, or three times longer than a candle, and costs only one-quarter of a cent. This candle is made in four lengths, each 1 1-16 inch diameter. Write to the company for further information.

WILL GO WITH THE PARROTT VARNISH CO.

We are informed that Charles T. Fullgraf has connected himself with the Parrot Varnish Co., of Bridgeport, Conn., and will begin with them on August 1.

BAG-OL-OGY.

Under the above title the Cleveland Bag Factory have published an eight page pamphlet contaiing some general information, a little in the way of jokes and wise sayings, and incidentally mentioning their product.

SLEIGH CATALOGUE.

The Jackson Sleigh Company, of Jackson, Mich., have forwarded to us their catalogue, No. 12, for the season of 1901 and 1902, in which they illustrate a line of sleighs manufactured by them at wholesale. Dealers who handle sleighs should obtain a copy.

NON-FADING RED.

The Sherwin-Williams Co., Cleveland, O., are sending out a folder in which they call special attention to their Premier non-fading red, a red which holds its color. This is an important matter, and you should write the company for full information regarding it.

NOW WITH THE BUFFALO SPRING & GEAR CO.

Mr. J. A. Carlisle has lately joined the rank of the carriage fraternity, being associated with the Buffalo Spring & Gear Co., Buffalo, N. Y. Though young in years, his sound business training, good judgment and affability have won him many friends who will congratulate him and wish him success handling the popular Buffalo vehicles in the white.

LAMP CATALOGUE.

Stevens & Sackett Co., of New Haven, Conn., have issued a well illustrated and carefully printed catalogue of the general line of lamps made by them, covering the field of light and heavy carriages, hearses, etc. A copy is a good thing to have at your elbow when you are selecting lamps for your vehicles.

ENLARGING THEIR PLANT.

The Fairfield Rubber Co., of Fairfield, Conn., are making additions to their mill as follows: Three large buildings for offices, shipping room and vulcanizing room, and will put in the largest of four roll callenders, five large mills, a refining mill, an embossing machine, a 350 horse ower engine (Fishkill Corliss), and vulcanizer with three runs.

SOLID TIRES.

The Diamond Rubber Co. ask that all users of rubber tires give their solid tires a trial. They are high grade in every respect. The company's aim is to give a superior article and one that is reliable. Their brand is two diamonds. Goods bearing this brand can be depended upon. Write them for prices, etc. Their address is Akron, O.

WAGON CATALOGUE.

One of the most complete catalogues that has reached us is that of the Ionia Wagon Company, of Ionia, Mich., manufacturers of "Capital" farm wagons. The illustrations show vehicles of excellent proportions, while the descriptive pages give many details that are of value to the purchaser. We recommend that you obtain a copy for future reference.

NAME CHANGED.

The Latimer Rubber Tire Co., of Chicago, Ill., has been incorporated under the laws of Illinois as the Latimer Tire & Rubber Manufacturing Co. The object of changing the name is to more clearly set forth the scope of the company's business. They absorb the old company. The officers and board of directors are the same as those of the old company.

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MACHINERY AND SKILLED LABOR.

A MISTAKE TO SUPPOSE THAT MACHINERY LESSENS THE DEMAND FOR HUMAN SKILL.

THE substitution of automatic or semi-automatic machinery for hand labor in industrial establishments has progressed so rapidly and has attained such large proportions, more especially in this country, during the past few years, that the subject is attracting much attention, and a wide diversity of opinion is expressed by students of industrial economics, employers and others as to the probable influence of this far-reaching evolution upon the future intellectual development and material welfare of the wage-earner.

The elimination of exhausting manual labor by the substitution of powerful machinery for puny arms has emancipated labor in our day from its hardest tasks and has given to the worker both inclination and leisure for the development of his intellect in various ways that were impossible under former conditions.

It is not true in point of fact that the operator of a modern labor-saving machine is restricted to the mere feeding of the machine with raw material; he is encouraged and expected to do very much more than this in order to obtain the best results. As an illustration I may mention a case in point where two men work side by side, tending duplicate machines. One man earns nearly twice the wages of the other, for the simple reason that he can produce in ten hours nearly twice the quantity of finished material, made to standard measurements, the permissible limits of variation being probably but a few thousandths of an inch. The difference in efficiency is in the men, not in the machines.

It is not merely the ability to turn out a maximum amount of work from a modern machine that constitutes a skilled operative. No matter how nearly automatic the machine may be, it is still subject to human guidance, and no matter how nearly perfect its construction its work is still subject to final correction and control by the hand of the operator. I am satisfied that in all trades where automatic machinery has been extensively introduced for the purpose, it may be, of supplanting hand labor, the ultimate result has proved beneficial to the workers in raising the general average of intelligence, and, furthermore, that it has largely increased the opportunities for labor.

Several years ago a labor-saving machine (an electric traveling crane) was introduced into a certain department of a large manufacturing establishment and immediately displaced no less than sixty helpers. Since then many other machines of like character have been installed, yet the number of workers in this establishment is more than 50 per cent. greater to-day than before, the total number of wage-earners in these works having risen from a little under 5,000 at the time alluded to to over 8,000 men at the present time, and the works have grown to be the largest of their kind in the world.

The introduction of labor saving machinery has proved beneficial to the workers in many other directions. It has shortened the hours of labor; it has improved the sanitary conditions in workshops; it has increased wages; it has increased the purchasing value of wages, and has elevated the social plane of the worker of the present day above that of his predecessors.

Finally I may say that I believe the opportunities for advancement of the wage-earner in this country are to-day far greater than at any previous time, and that this fortunate condition of affairs is due largely to the educational influence of machinery upon the wage-earner, and to his emancipation from grinding toil by the aid of modern labor-saving machines. The opportunities for lucrative employment and rapid advancement to young men properly equipped, entering the industrial establishments to-day are greater than at any previous time within my recollection.—*Alexander E. Outerbridge, Jr., in an address before the Franklin Institute.*

THE SEINSHEIMER PAPER COMPANY.

THE Water Proof Shaft Cover made by The Seinsheimer Paper Company, Cincinnati, Ohio, has given universal satisfaction, and it is the only protection that has been known to keep the paper from sticking to the paint and varnish. The cost of it is the same as the ordinary shaft wrapping paper, while it takes only one-third of the time to put it on the shaft. Some of the large manufacturers who make fine work in addition to the cheaper grades have induced The Seinsheimer Paper Company to make a better grade of shaft cover for their fine work, and they are now making a new cover called the Duplex Shaft Cover, which is strong enough for the finest work and at the same time is not expensive.

INCREASING THEIR FACILITIES.

THE Wilcox Manufacturing Co., of Mechanicsburg, Pa., are erecting a new addition to their plant. It will be one story, of brick and iron, 140 x 40 feet, and will be used as a grinding, finishing, stock and shipping department. The building of this addition is due to the overcrowded condition of their present plant, and will now enable them to ship orders on sight. This company have just gotten out a new catalogue, which is a thing of beauty and already much in demand. It contains a full line of carriage hardware and bike axle forgings such as their renowned twentieth century wheel, and several parts pertaining to that class of work.

INCORPORATED.

THE Boston Roller Chafe Iron Company has been recently incorporated, with its main offices at 178 Devonshire street, Boston. Its principal business can be inferred from its name, which is to manufacture, under recent patents, a new, practical and up-to-date roller chafe iron. The factory of the company is located at Brockton, Mass. The company is also privileged to manufacture and deal in carriages and their accessories, as well as to solicit agencies from the leading carriage manufacturers. The officers of the company are A. Parker Smith, Jr., president and general manager, and H. B. Clark, secretary and treasurer.

STOW CATALOGUE NO. 9.

THE Stow Manufacturing Co., of Binghampton, N. Y., manufacturers of the Stow flexible shaft, have issued Catalogue No. 9. It is a decidedly interesting publication, even for the person who is not interested in this great mechanical appliance, and to the man engaged in any business that calls for the use of tools it is of great value, as it illustrates and describes the numerous uses to which this flexible shaft can be put, as well as special machines made by the company. We cannot enumerate its many uses, but no man using machinery can afford to be without the flexible shaft. Write to the company for a copy.

A PLANT FOR SALE.

WM. W. BOOB, of Center Hall, Pa., dealer in wheels, gears and hardware, offers his entire plant and business for sale. His business has grown to an extent that warrants his moving to a more central locality. His local trade at Center Hall is large and profitable, and anyone desirous of engaging in the sale of wagons, carriage and wagon hardware and materials and a general hardware business, can procure that at Center Hall. The town is a thrifty one, 210 miles from Philadelphia.

OWOSSO CARRIAGE COMPANY MAKES CHANGES.

THE Owosso Carriage Co., Owosso, Mich., has increased its capital stock to $100,000. The board of directors has been increased to five and is now made up as follows: A. M. Bentley, M. L. Stewart, C. D. Stewart, J. C. Shattuck and J. H. Robbins. Messrs. Shattuck and Robbins will at once give the business at least one-half their time each day. The resignation of Mr. Pratt, the late efficient secretary and treasurer, has been accepted and has taken effect.

UNIVERSAL MILLING MACHINES.

THE Garvin Machine Co., of New York City, have been engaged in the manufacture of milling machines for thirty-nine years, and during the time have never lost an opportunity to improve their product. The result is a machine that is so nearly perfect that one wonders if further improvement is possible. The company have issued a very attractive descriptive catalogue, which they will send you on application. If interested in machines you should obtain one.

R. D. & C. O. BRITTON.

THE above firm is located at Hartford, Conn., where they carry an extensive line of carriages and wagons of all popular and standard styles, also harness, collars, etc., and in addition they manufacture specialties in pneumatic tired vehicles. Both members of the firm are well known and popular, and THE HUB and other friends congratulate them on their prosperity.

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THEY MAKE HIGH GRADE VEHICLES.

FLYNN & DOYLE, of Bantam, Conn., are old-time carriage and wagon manufacturers, having been established for twenty-two years. They make high grade carriages to order and sell not only the local trade, but also to such towns as Waterbury, Hartford, New Haven, etc. They get a good line of business from the wealthy people who spend their summers at the famous Bantam Lake.

ORGANIZED IN ONEIDA, N. Y.

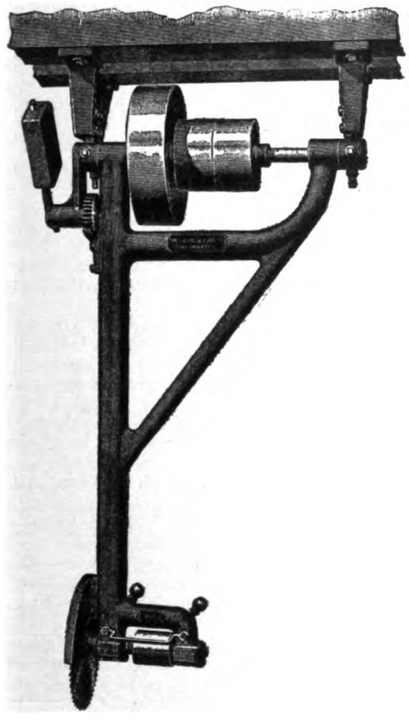
AT a recent meeting in the offices of the Oneida Rubber Tire Works, Oneida, N. Y., a company was organized for the purpose of dealing in and promoting the use of automobiles in Central New York. The following officers were selected: Theodore Coles, president; H. M. Reynolds, vice-president; S. Allen Clark, secretary and treasurer. Correspondence is invited with manufacturers desirous of being represented.

THE CINCINNATI PANEL CO.

THE Cincinnati Panel Co., of Cincinnati, O., manufacturers of carriage wood-work and gears, have been doing a very heavy business, and for the past six months they have had more to do than they could properly take care of, and were compelled to decline orders. They have recently issued a complete catalogue of new styles. Send for a copy. The company will exhibit at the C. B. N. A., and the vehicle exhibit next fall.

AN IMPROVED SWING SAW.

HERE is a machine for general work that possesses the requisite qualifications to make it prove of advantage to any who have use for such a tool, and who will carefully examine the merits and points of advantage embodied in the construction of this. Among the



PATENT SWING CUT-OFF SAW.

features on this machine which the manufacturers make superior in range of work and workmanship to any of its class at present on the market are the following:

1. The patent adjustable balance weight, the way it is attached and manner of operation, gives the machine great advantage for doing rapid work, as it helps the operator both ways, and when the cut is finished swings the saw clear off the lumber without any effort on his part.

2. The hangers are very perfect. The frame swinging on the outside of the boxes, with the countershaft inside these, insures perfect execution, freedom from wear and impossible to get out of line, as it swings not on the countershaft, but on the boxes of the hangers.

3. The steel mandrel is fitted with an expansion device to fit blades with different holes; the patent shield on the saw prevents all possible accidents. The frame of the machine being broad at the base insures great accuracy.

Further particulars of this machine, together with lowest terms, will be willingly furnished by the makers, J. A. Fay & Egan Co., of 421 to 441 West Front street, Cincinnati, O.

FOR YOUR INFORMATION.

THE industrial department of the Lackawanna Railroad, in charge of William B. Hunter, and having its headquarters at 26 Exchange Place, New York City, has just issued a 200-page booklet under the caption, "Industrial Opportunities." This work treats of every town on the line of the Delaware, Lackawanna & Western Railroad, showing its population, its distance from New York and from Buffalo, its railroad facilities, its leading industries, its leading shipments, its rate of taxation, cost of labor, rent of houses, how lighted, whether it has water works, principal power, approximate cost of steam coal, approximate value of lands and describing vacant lands or factories available for manufacturing purposes. In the introduction the aim of the Lackawanna Railroad is set forth as follows:

First—To give assistance to manufacturers in the selection of the most favorable site for their industrial enterprises.

Second—To help cities, towns and villages along the line to expand and broaden through the location of new industries.

Advantages of this line in the mining regions of New Jersey and Pennsylvania and the agricultural districts in the State of New York are set forth. As evidence of the interest in manufactures on its line, the road has an exhibit of locomotives and cars at the Pan-American Exposition and has placed in the cars exhibits of numerous manufacturers, among them the Avoca Wheel Co., of Avoca, N. Y. In addition to its value to the railroad company, it has an historical value that makes it well worth preserving. Copies of the book will be forwarded on application to the industrial department.

BATAVIA WHEEL CO. SELLS OUT.

THE Standard Anti-Friction Equipment Co., of New York, have purchased outright the entire plant of the Batavia Wheel Co., of Batavia, N. Y., and will operate the plant on a far more extensive scale than it ever has been conducted in the past. At present about sixty men are being employed there. In a year's time, it is predicted by those who are in a position to know, the factory will be running within the neighborhood of 200 men on its pay roll. The New York concern has also made a long time contract with the Batavia Rubber Tire Co., the stockholders of which have been interested in the wheel company, by the provisions of which it agrees to take the entire output of the tire corporation.

The Standard Anti-Friction Equipment Co. was organized only a little more than a year ago, with President C. E. Roberts of the Standard Screw Co., of Chicago, as president and E. B. Cadwell, of New York, as vice-president and general manager. Its main offices are at No. 50 Broadway, New York. Its business is the manufacture of running gears and parts for running gears for high class vehicles of all kinds, and it has already built up an enormous trade. It furnishes everything for a vehicle except the body. Some of the parts are manufactured in factories which it owns and operates, while others are made for it by other concerns on contract. Its system has been reduced to such a science that it is able to produce gears at a much less cost than it would if it actually manufactured all of the parts. All of its products bear the trademark "Empire." Its stock gear, furnished complete with shafts, is made with wood or wire wheels, pneumatic or solid rubber tires and iron or wood reaches and axles. It manufactures what is claimed to be the finest ball-bearing axle on the market and which is largely used for automobiles. These are also made for heavy drays.

The Amesbury (Mass.) Pneumatic Gear Co. is owned entirely by the New York company and the latter has a contract with the Sheldon Axle Co., of Wilkesbarre, Pa., to furnish all of its axles and springs. At Wilkesbarre the S. A. F. E. concern also owns a large plant, to which all of the parts for its gears are shipped, and where they are assembled. All its ball bearings are manufactured in the ball bearing department of the Chicago Screw Co.'s plant.

After August 1, when the deals go into effect, the New York company will manufacture in its Batavia factory all the wood wheels

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used on its gears. This is an important branch of its business, which is growing with great rapidity, and there is every prospect that the industry will become one of the largest in Batavia. It is understood that the corporate life of the wheel company will be continued and that there will be no changes in the management. The New York company does not buy out the rubber tire company, but, as has been stated, has contracted to take its entire output and will use its tires exclusively. They will be applied at the wheel factory. This insures a large increase in business for the tire company.

The Batavia Wheel Co. was incorporated on May 13, 1887, with $50,000 capital. On October 6, 1890, the capital stock was increased to $125,000 and the name was changed to the Batavia Carriage Wheel Co. The present officers are as follows: President, Frank Richardson; vice-president, D. W. C. Gardiner; secretary, W. W. Leavenworth; treasurer, A. M. Colt; superintendent, John M. Sweet. The Batavia Rubber Tire Company, which was organized on April 19, 1900, with $50,000 capital, is officered as follows: President, Frank Richardson; vice-president, John M. Sweet; secretary, W. W. Leavenworth, treasurer, A. M. Colt.

EXPIRED PATENTS.

THE following list of patents, trade-marks and designs of interest to our patrons are furnished by Davis & Davis, solicitors of American and foreign patents, Washington, D. C., and St. Paul Building, New York City. A copy of any of these may be had for 10 cents by sending to the above firm.

PATENTS EXPIRED MAY 6, 1901.

297,968—Carriage Top—Herman Bucholz and William Morris, Janesville, Wis.

297,974—Vehicle Spring—John D. Dorsey, Greenville, Ill.

297,973—Axle for Vehicles—James J. Devine, Plymouth Meeting, Pa., assignor of one-half to Thomas Lynch, same place.

297,016—Side-Bar Vehicle—Hollis W. Moore, Olean, N. Y.

298,078—Wagon Running Gear—Peter Gendron, Toledo, Ohio, assignor to the Gendron Iron Wheel Co., same place.

PATENTS EXPIRED MAY 13, 1901.

298,381—Carriage Apron—Aaron C. Holden, Pittston, Pa.

298,412—Tow-Wheeled Vehicle—Cyrus W. Saladee, Torrington, Conn.

298,413—Two-Wheeled Vehicle—Cyrus W. Saladee, Torrington, Conn.

298,436—Wagon Running Gear—Alexander Womack, Falk's Store,

298,516—Side-Bar Vehicle—Jackson Taylor, Newberry, S. C.

PATENTS EXPIRED MAY 20, 1901.

298,764—Road Cart—Orlando J. McCollum, and Carll Oskar Stran, Aurora, Ill.

298,774. Carriage-Top—Rudolpf H. Praff, Ashtabula, Ohio.

298,794. Sliding Door for Carriages—Frank P. Stone, Chicago, Ill.

PATENTS EXPIRED MAY 27, 1901.

299,105—Two-Wheeled Vehicle—John C. Blocher, Lima, Ohio.

299,124—Two-Wheeled Vehicle—Walter S. Frazier, Aurora, Ill.

299,151—Iron Wheel—James R. Little, Quincy, Ill., assignor of three-fourths to Cylon Smith, Thomas Hill and Pliny Bliss Williams, all of the same place.

299,191—Spring Vehicle—John B. Armstrong, Guelph, Ontario, Canada, assignor to the Guelph Carriage Goods Co. (Limited), same place.

299,377—Dumping Wagon—Francis A. Graff and Louis C. Hipple, New Albany, Ind.

297,747—Vehicle Running Gear—James M. Bradley, Tyner City, Ind.

297,771—Shifting Buggy Top—George Englehart and Charles Weidner, Attica, Ohio.

RECENT PATENTS RELATING TO THE CARRIAGE TRADE

658,904—Wagon-box Support—Wm. C. Warren and A. Smithson, Sedan, Minn.

659,162—Steam Motor for Automobiles—Frank W. Waterman, Baltimore, Md.

659,189—Spring-motor Vehicle—Wilhelm Weiner, assignor of one-half to H. Schmitz, Wymore, Neb.

659,279—Combined Carriage Lamp and Foot Warmer—John B. Bartholomew, Detroit, Mich.

659,568—Motor Vehicle—Enrico Bernardi, Padua, Italy.

659,575—End-gate for Wagons—Wesley Carpenter, Enterprise, O.

659,581—Motor-vehicle—Avon M. Coburn, Daunt, Cal.

659,509—Rubber Tire—John L. Connable, Chattanooga, Tenn.

659,212—Wagon-brake—George W. Cox, Union, Kan.

659,585—Tail-board Fastening for Wagons—George E. Daniels, Rowley, Mass.

659,222—Self-propelled Vehicle—Calude H. Foster, Cleveland, O.

659,528—Fifth Wheel—Monroe Hoagland, Henderson, Ky.

659,309—Wagon—Isaac A. Manchester, Fall River, Mass.

659,589—Pneumatic Tire for Wheels—Robert J. C. Mitchell, Waterfoot, England.

659,318—Motor-vehicle—George T. Pillings, Elgin, Ill.

659,262—Thill Coupling—Wm. C. Shipherd, Cleveland, O.

659,557—Pneumatic Tire for Vehicles—Uzziel P. Smith, assignor of one-half to T. Kane, Chicago, Ill.

659,332—Front Wheel and Yoke for Trucks or Other Vehicles—Enoch Whalley Williamansett, assignor of one-half to C. H. Curran, Holyoke, Mass.

659,908—Antislipping Attachment for Vehicle Wheels—Boyd K. Appleman, Rohrsburg, Pa.

659,956—Motor Cycle—Louis and A. Chapelle, St. Ouen l'Aumone, France.

659,729—Control Apparatus for Electric Carriages—Howard F. Eaton, Quincy, Mass.

660,074—Carriage Axle—Charles H. Fuller, Oxford, Mich.

659,920—Rubber Tire—Arthur W. Grant, Springfield, O., assignor to Consolidated Rubber Tire Co., New York, N. Y.

659,743—Short-turning Gear for Vehicles—Wm. B. Green, Ragsdale, Ky.

659,665—Brake for Vehicles—Charles R. Greuter, Holyoke, Mass., assignor to Holyoke Automobile Co., Jersey City, N. J.

659,868—Singletree and Neck-yoke Lathe—Christopher C. Hickel, Muncie, Ind.

659,798—Spring Connection for Vehicles—Peter L. Jones, San Francisco, Cal.

660,020—Lumber Cart—Wm. A. Marshall, Washburn, Wis.

659,893—Thill Coupling—John Marvin, assignor, by mesne assignments, to F. E. Fay, Marengo, Ill.

659,826—Coal-delivery Wagon—Daniel M. Pfautz, assignor of two-thirds to H. B. and H. W. Amerling, Philadelphia, Pa.

660,026—Automatic Wagon Brake—John H. Poulter, Newman, Ill.

659,861—Vehicle Wheel—Wm. H. Schofield, Chicago, Ill.

659,992—Vapor Burner for Steam Generators—Francis E. Stanley, Newton, Mass., assignors to Locomobile Co. of America, Wheeling, W. Va.

659,718—Spring Gear for Vehicles—David True, Amesbury, Mass.

660,410—Lock for Vehicle Wheels—George Becker, New York, N. Y.

660,524—Convertible Carriages—Edward K. Briggs, Amesbury, Mass.

660,327—Running Gear for Vehicles—Franklin Copeland, New York, N. Y.

660,490—Tire Setter—Wm. Daugherty, assignor of one-half to A. D. Sprinkell, Lawrenceville, Ill.

660,291—Vehicle—Thompson A. Dull, assignor of one-half to H. S. Fischer, Chicago, Ill.

660,497—Spring-propelled Vehicle—Alexander R. Fischer, assignor of one-half to S. A. McDonald, Chicago, Ill.

660,184—Tire—Albert E. Flatter, Greenville, O.

660,098—Motor-driven Vehicle—Richard J. Gatling, New York, N. Y.

660,423—Whiffletree Hook—Nicholas Glock, Jr., Kenton, O.

660,186—Brake for Vehicles—Frederick G. Goettmann, Sr., Allegheny, Pa.

660,296—Motor Cycle—George D. Green, assignor to J. H. Sager, Rochester, N. Y.

660,508—Wagon-body—Barny Harboth, Effingham, Ill.

660,158—Vehicle—Bohn C. Hicks, assignor to Hicks Motor Cycle Co., Chicago, Ill.

660,192—Self-propelled Vehicle—Ralph Jackson, Altrincham, England.

660,254—Sand-shield and Truss for Vehicle Axles—Henry Keller, Sayk Centre, Minn.

660,256—Thill or Pole Coupling for Vehicles—James G. Lamb, Johnstown, Pa.

660,447—Wagon-body and End-gate Therefor—Wm. F. Marquardt, Dysart, Ia.

660,452—Cushion Tire for Vehicles—John F. McGuire, Akron, O.

660,218—Combined Shaft-support and Coupling—Wm. E. Murbarger, Indianapolis, Ind.

660,166—Reach Connection for Vehicles—Oscar Patzack, Mandan, N. D.

660,401—Vehicle Wheel—John C. Smith, Massapeag, Conn.

33,433—Design, Wagon-body Bow-socket—Jefferson D. McCabe, Woodbury, Tenn.

33,434—Design, Wagon-body Brace—Jefferson D. McCabe, Woodbury, Tenn.

660,549—Brake for Vehicles—Otto V. Bachelle, Chicago, Ill.

660,838—Rubber-tire Setting Machine—Wm. S. Brooks, assignor to Goodyear Tire & Rubber Co., Akron, O.

660,701—Wagon Running Gear—Adrian Hitt, Jersey City, assignor to H. Berg, Orange Valley, N. J.

660,702—Wagon Standard—Adrian Hitt, assignor to Imperial Manufacturing Co., Jersey City, N. J.

660,992—Wagon Dump and Elevator—John S. Kidd, Des Moines, Ia.

660,914—Vehicle Brake—Hugh Magee, Meadville, Miss.

660,915—Spoke Tire and Felly Tightener—Henry Meyer, Des Moines, Ia.

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660,729—Metallic Vehicle Wheel—Thomas Midgley, Columbus, O.
660,710—Runner Attachment—Wm. C. Oswald, assignor to Kalamazoo Wagon Co., Kalamazoo, Mich.
660,924—Driving and Speed-changing Mechanism for Motor-vehicles—Louis Renault, Paris, France.
660,873—Vehicle Wheel—Samuel H. Van Trump, Lawson, and F. D. Rowell, Liberty, Mo.
660,608—Low-down Short Turn Gear for Vehicles—Milton O. Wickes, Holyoke, Mass.
33,473—Design, Cushion-spring for Carriage Top Bows—Herbert Severance, Sac and Fox Agency, Okla. Ter.
661,391—Singletree Hook—Thore A. Bakken, De Soto, assignor of one-half to O. M. Gilbertson, La Crosse, Wis.
661,255—Lock-nut for Vehicle Axles—Wm. Belfield, assignor of three-fourths to R. Shearer, J. Findlay, and G. Belfield, Platteville, Ill.
661,029—Wagon Body—James Bower, Topeka, Ill.
661,099—Tire for Vehicle Wheels—James B. David, Neath, England.
661,208—Thill Coupling—Ernest J. S. Davis, Knoxville, Tenn.
661,210—Running Gear for Motor Vehicles—John W. Eisenhuth, assignor, by mesne assignments, to M. G. Read, New York, N. Y.
661,172—Automatic Fire-inflator—Paul F. Gillette, assignor, by mesne assignments, to United Specialty Co., New York, N. Y.
661,342—Carriage Door Lock—Harry E. Hirst, assignor of one-half to A. Wolfington, Philadelphia, Pa.
661,219—Dumping Wagon—Thomas Lee, assignor of one-third to W. D. Rowland, Philadelphia, Pa.
661,409—Motor Vehicle—George W. Lewis, Chicago, Ill., assignor to Lewis Motor Vehicle Co., Camden, N. J.
661,149—Antirattler Thill-coupling—Frank W. Mallery, assignor of one-half to J. T. Smith, Overton, O.
661,376—Spoke-securing Nipple—Frederick W. Marshall, Westville, Conn.
661,427—Sled—James T. Sibley and R. T. Newton, assignors to W. S. O'Connor, New York, N. Y.
661,388—Tire-tightener—Francis A. Terpening, Albia, Kan.
33,515—Design, Lunch Wagon Body—Thomas H. Buckley, Worcester, Mass.
33,516—Design, Vehicle Thill—Wm. H. Fyan, Port Huron, Mich.
661,508—Running-gear for Vehicles—Charles T. Fletcher, Westborough, Mass., assignor, by mesne assignments, to Locomobile Co. of America, New York, N. Y.
661,658—Tire-bolting Machine—John F. Gilliland, New Vienna, O.
661,721—Changeable Running Gear for Vehicles—Ebenezer C. Jenkins, Shrewsbury, Mass.
661,611—Wheel—Albert W. King, Chicago, Ill.
661,582—Wagon-end Gate—Albert H. and S. A. Kring, Grape, Mich.
661,741—Vehicle Pole—George A. Lambert, assignor to Buckeye Manufacturing Co., Anderson, Ind.
661,583—Gear Case for Motor Vehicles—Frank Lamkin, Norwalk, Ohio.
661,915—Resilient Tire for Wheels—Jean P. Legrand, Levallors-Perret, France.
661,543—Controlling Mechanism for Automobiles—John G. MacPherson, assignor to MacPherson Automobile Co., Philadelphia, Pa.
661,614—Vehicle Tire—Arthur H. Marks, assignor to Diamond Rubber Co., Akron, O.
661,887—Automatic Tire-inflating Device—Thomas H. McCauley, Port Arthur, Canada.
661,888—Whiffletree—Albert Nelson, Idaho Falls, Idaho.
661,704—Automobile—Daniel M. Pfautz, assignor of one-half to H. W. Amerling, Philadelphia, Pa.
661,815—Driving Apparatus for Vehicles—Henry Preuss, Hamburg, Germany.
661,553—Running-gear for Motor-vehicles—Andrew L. Riker, Stamford, Conn.
661,671—Tire or other Valve—George H. F. Schrader, New York, N. Y.
661,672—Tire or other Valve—George H. F. Schrader, New York, N. Y.
661673—Tire and Valve Attacher and Valve therefor—George H. F. Schrader, New York, N. Y.
661,590—Vehicle Hub—Joseph Shaver, Milwaukee, Wis.
663,845—Automatic Vehicle Brake—Herbert L. Bailey, assignor to Handy Things Co., Chicago, Ill.
664,208—Motor Vehicle—Henry B. Berendsen, Milwaukee, Wis.
664,234—Detachable Hinge Coupling for Vehicles—Hamline J. Chambers, Council Bluffs, Ia.
664,013—Thill Coupling—John Clarke, Liberty Hill, Conn.
664,036—Support for Buggy Thills—John A. Crisp, Jefferson, O.
664,018—Motor for Vehicles—John W. Eisenhuth, assignor by mesne assignments to M. G. Read, New York, N. Y.
663,884—Tire-bolt Wrench—Amos E. Groom, Mars, Pa.
663,893—Running Gear for Vehicles—Charles Heart, Frankton, Ind.
663,898—Device for Use in Securing Rubber Tires on Vehicle Wheels—Wm. Holmes, assignor to Morgan & Wright, Chicago, Ill.
663,899—Vehicle Tire Fastening—Wm. Holmes, assignor to Morgan & Wright, Chicago, Ill.
664,159—Automatic Vehicle Hitch Brake—Charles Kitchin, Elwood, Ind.
664,160—Motor-driven Vehicle—Peter C. Leidich, Tamaqua, assignor of three-eighths to G. H. Focht, W. W. Hollingsworth and M. D. Atkinson, Philadelphia, Pa.
664,090—Carriage Body—Frederick Menzer, Flint, Mich.
664,003—Machine for Repairing Vehicle Axles—James A. Reynolds, A. P. Brosius, and J. W. Unger, Carroll, Ia.
664,292—Motor Vehicle—Wm. Riddell, San Francisco, Cal.
663,986—Steering Apparatus for Motor Vehicles—John E. Thornycroft, London, England.
664,454—Wagon-body—August G. Anderson, Moorhead, Minn.
664,611—Vehicle Axle and Box—John G. Anderson, Rock Hill, S. C.
664,373—Combined Condenser and Dashboard for Automobiles—Leon F. N. Baldwin, Providence, R. I.
664,715—Weighing Chute Wagon—Charles Bernhardt, Philadelphia, Pa.
664,728—Thill Coupling—Ansill W. Decker, Nicholson, assignor of one-half to W. C. Nebelung and F. H. Thomas, Scranton, Pa.
664,729—Steering Axle for Automobiles—Jacob B. Decker, assignor to Sheldon Axle Co., Wilkes-Barre, Pa.
664,809—Gearing for Motor Vehicles—George P. Dorris, St. Louis, Mo.
664,478—Motor Vehicle—Frank B. Hopewell, Cambridge, Mass.
664,647—Vehicle Wheel—Howard Kinney, Passaic, N. J., and J. O. Hankins, Richmond, Va.
664,483—Vehicle—Jorgen Klovstad and G. W. Jonsen, Christiania, Norway.
664,818—Running Gear for Vehicles—Samuel M. Morden, assignor to A. E. Perren, Buffalo, N. Y.
664,506—Tire-tightener—Leon M. Richardson, Amesbury, Mass., assignor of two-thirds to Standard Anti-Friction Equipment Co., New York, N. Y.
664,435—Spoke-swaging Machine—Charles E. Roberts, Oak Park, Ill.
664,684—Runner for Wagons or Carriages—Frank G. and G. L. Scott, Newport, R. I.
664,804—Vehicle Brake—Jasper R. Young, assignor of one-half to E. Weber, Dexter, Mo.
665,363—Combined Vehicle Pole and Shafts—Isaac N. Bradfield and W. A. Pool, Falfis, Okla. Ter.
664,931—Vehicle Tire—Wm. R. Donaldson, Chicago, Ill.
665,081—Vehicle Tire—Harvey S. Firestone, assignor of one-half to G. B. Dryden, Chicago, Ill.
665,203—Elastic Tire—Thomas Gare, New Brighton, England.
664,853—Motor Vehicle—Rudolf Hagen, Cologne, Germany.
665,006—Thill Coupling—Dana C. Haskell, assignor of one-half to S. Short, North East, Pa.
665,093—Steering Gear for Vehicles—Arthur Herschmann, New York, N. Y.
664,951—Thill Coupling—Henry Higgin, assignor to Higgin Manufacturing Co., Newport, Ky.
665,101—Vehicle Hub—Edwin B. Jones, Hornellsville, N. Y.
665,270—Motor Vehicle—Wm. N. Rumley, La Porte, Ind.
665,137—Dumping Wagon—Wm. O. Shadbolt, New York, N. Y.
665,283—Axle Nut—George W. Terry, assignor of two-thirds to E. H. Stowell and I. M. Terry, Pontiac, Mich.
665,297—Vehicle Reach—Peter S. Withington, assignor of one-half to C. B. Holmes, Slack, Wyo.
665,715—Tire for Vehicle Wheels—Charles F. Allen, Hueneme, assignor of one-half to L. B. Hogue and W. C. Hewitt, San Paula, Cal.
665,723—Tire—Walter A. Barrows, Chicago, Ill.
665,822—Tire—Walter A. Barrows, Chicago, Ill.
665,593—Top-prop for Buggies—Joseph H. Battenfield, Dardanelle, Ark.
665,628—Fifth Wheel—Richard S. Birch, Burlington, N. J.
665,503—Brake Lever for Road Vehicles—Edgar A. Brooke, Dillon, Mont.
665,651—Motor Vehicle—Henry Courteen, Devizes, England.
665,602—Tire Tightener—John W. Hawkins, assignor of two-thirds to F. McGuffy and W. F. Puryear, Tyro, Ark.
665,531—Neck-yoke Stop for Vehicle Poles—Andrew F. Keeter, Yellville, Ark.
665,605—Tire—James Kelly, assignor of two-thirds to N. D. Strayer and J. Ferguson, Passaic, N. J.
665,611—End-gate for Wagons—Edgar C. and H. L. Litchfield, assignors to Litchfield Manufacturing Co., Webster City, Ia.
665,569—Interchangeable Hub—Edward W. Little and R. Janney, Keene, N. H.
665,833—Pivot Structure for Vehicle Wheels—John P. McLearn, assignor to J. D. Eby, trustee, Philadelphia, Pa.
665,450—Electric Brake for Vehicles—Joseph N. Mahoney, assignor to Price, Darling & Co., New York, N. Y.
665,699—Automobile Fire Apparatus—Ernest F. Steck, Chicago, Ill., assignor to Fire Extinguisher Manufacturing Co., New York, N. Y.
665,700—Vehicle Wheel Tire—Arthur L. Stevens, New York, N. Y.
665,488—Cushion Tire for Vehicle Wheels—Frank H. Turner, Hartford, Conn.
665,843—Carriage Iron—Fred. J. Wagner, Dallas, Ore.
665,497—Motor Vehicle—Wm. O. Worth, Chicago, Ill., assignor of two-thirds to W. R. Donaldson, Louisville, Ky., and H. W. Kellogg, Battle Creek, Mich.
33,871—Design, Electric Vehicle Body—Charles G. Burrows, assignor to Eddy Electric Manufacturing Co., Windsor, Conn.
666,179—Tire—Charles E. Bradish, Moline, Ill.
665,872—Wheel Hub—Edmund Brueggemann, Castello, Mo.
666,186—End-gate for Wagons—Frederick W. De Long and H. W. Emrich, Okabena, Minn.
666,218—Coupling and Steering Connection for Vehicles—James E. and J. A. Ebersole, Campbelltown, Pa.

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Trade News.

BY UNCLE SAM.

ALABAMA.

FLORENCE—The Florence Wagon Works has just placed a 400-horse power Corliss engine and boilers to supply additional power for the new machinery and improvements put in. The output of the plant has been greatly increased and the factory now has a capacity of 16,000 wagons a year. The management has recently terraced the grounds and had an experienced landscaper at work with a large force of hands improving the surroundings. The factory has all the improved labor-saving devices, which has greatly increased the output and cheapened the cost of production.

HUNTSVILLE—The capacity of the Huntsville carriage factory, owned by Smith & Greene, is being doubled. The firm now employs about fifteen men in all departments, and this number will be nearly doubled when the extension is completed.

CALIFORNIA.

SAN JOSE—The Century Manufacturing Co. is the name of a new San Jose industry which was incorporated yesterday with a capitalization of $200,000. The company will manufacture a patent buggy nut and other wagon fixtures. Although a San Jose enterprise, its headquarters will be in Chicago, where the factory will also be located for the present. At a meeting of the incorporators the following officers were chosen: President, H. M. Barngrover; secretary, F. H. Holmes; directors, Messrs. Barngrover and Holmes, F. H. Lawn, D. C. Crummey, Joseph McKiernan and James A. Kidward. It was decided to place only 200 shares of the stock on the market at $10 a share. The balance has been subscribed by the incorporators.

CONNECTICUT.

DANIELSON—Call Bros. have purchased the old armory property on Furnace street, which they have used for a number of years past and will immediately begin improvements which will make it the model carriage repository in the State. The building, which is 50 x 80 and three stories high, will have a new and attractive front, an elevator will be put in and a shed built upon the rear for old carriages. There is about one-half an acre of ground included in the purchase.

LEBANON—Elisha F. Tucker and his son Alfred, who have been associated for several years in the manufacture of wagon stake irons, have dissolved partnership. The business will be conducted by E. F. Tucker.

DISTRICT OF COLUMBIA.

WASHINGTON—A petition in voluntary bankruptcy has been filed by Walter A. Johnson, attorney, in behalf of William F. Geyer, who is a dealer in second-hand wagons, carriages and buggies at 1,210 Ohio avenue northwest. His liabilities are given as $15,579.70 and assets as $250.

FLORIDA.

JACKSONVILLE—McMurray & Baker, the well known carriage and wagon manufacturers, have moved their salesroom to 440 West E street, where they are now prepared to fill all orders in their line. Their factory is located at the Union Depot.

ILLINOIS.

CHICAGO—Iwill Buggy Top Supporter Co., Chicago; capital, $2,500; manufacturing buggy top supports and novelties; incorporators, W. N. Hull, M. D. Seymour, Sophie A. Chapman.

CHICAGO HEIGHTS—The carriage works of A. Montgomery Ward & Co., in course of construction at Chicago Heights, are rapidly nearing completion. It is expected that the plant will be ready to begin operations by September 1, giving employment to several hundred men. The plans for the factory building, when drawn by R. E. Schmidt, architect, were made with a view to securing a perfect type of complete modern factory. In point of construction and interior arrangement the plant will have no equal in the country. The factory will be located on a ten-acre site in the vicinity of the Sheldon-Foster Glass Works. The building will be brick, stone and mill construction. It will be divided into two principal parts by fire walls, all the openings into the building, stairways and ventilating shafts being protected by metal doors. The factory will be equipped with a large power plant, fire pump, heating apparatus, elevators and every modern convenience. The new structure will be 62 x 740 feet in dimensions. When completed its total cost, together with machinery, will amount to $250,000. The location of this industry was determined by the transportation advantages afforded the manufacturers at Chicago Heights.

DALLAS CITY—Oscar Edwin Burg, of L. Burg Carriage Co., was married to Miss Chloe Isabel Schneider on June 27 at Nauvoo, Ill.

PEORIA—The extensive wagon works of H. H. Smith & Co., of this city, is so crowded with orders, with all their improved machinery that they have put in since their new shops have been rebuilt, that their works are now running overtime, twelve hours a day, from 6 a. m. to 7 p. m. This shows that this firm is progressing, and are hustling in building and filling their many orders.

INDIANA.

GOSHEN—The Case buggy top factory, owned by L. F. Case and Samuel Wise, was gutted by fire at 1 o'clock July 4. When discovered by the night watchman the entire building was in flames and its destruction is supposed to be due to the work of incendiaries. It is estimated that the loss will reach $15,000. As soon as the losses are adjusted the debris will be cleared away and the firm will then see at what price a new building can be erected in which they can commence manufacturing again. Mr. Case had heard of the talk about the Ariel plant and said if that plant could be secured he would organize with a capital stock of from $30,000 to $50,000 and run a factory employing at least fifty men. Business Men's Associations at Rockport, Ind.; Marshall, Ill.; New Castle, Ind., and at Elkhart have written the firm asking what they wanted in the way of a bonus to come to their respective towns. Nothing will be done until their matters can be closed up and the insurance adjusted.

GREENSBURG—The Doles spoke and rim factory, one of the main manufacturing plants of the city, was destroyed by fire Saturday, June 30. Thomas Allen, the engineer, was badly burned while trying to save property. The origin of the fire is unknown. Loss, $10,000; insurance, $2,000. This is the second time this factory has been destroyed by fire.

INDIANAPOLIS—The National Vehicle Co., of this city, has filed articles of incorporation with the Secretary of State, with a capital stock of $150,000. The company has been operating under the name of the National Automobile and Electric Co. The articles filed state that it is the purpose of the company to manufacture all kinds of automobiles, carriages, buggies and wagons. The directors are Arthur C. Newby, Charles E. Test, Robert Martindale, Henry T. Hearsey and Loren S. Dow.

LOGANSPORT—Simon J. Carroll, who for several years has conducted a carriage and bicycle business on Market at the south end of Pearl street, has closed out the business and will remove the remainder of the stock to Royal Center, where he also conducts a store.

IOWA.

DUBUQUE—T. J. Masterson has opened up a wholesale implement and vehicle concern in this city and will keep a full line of wagons, buggies, plows and all accessories. This adds another industry to Dubuque's wholesale business houses and is one that promises to become quite important. The business affairs of the company will be managed by Mr. Masterson, who has a wide experience in all branches of the business, and an extensive acquaintance with the implement trade throughout the State. The concern will employ for the present four traveling salesmen and will make temporary headquarters with one of the transfer houses of the city until permanent quarters are secured.

A large and complete stock of vehicles and implements and their accessories will be carried in stock here—and also a transfer stock at Cedar Rapids and Cedar Falls—thus affording prompt shipments into all the territory covered by the company. For the past nine years Mr. Masterson has been connected with the A. A. Cooper Co., of this city, and has worked for them in various capacities and of late has had charge of a portion of their business. He is well acquainted with this line of work and without doubt he will build up a large and successful concern.

KENTUCKY.

SEVEN HILLS—Articles of incorporation were filed on July 3 by the Hoagland Buggy Co., of Seven Hills, Ky.; $10,000 capital stock.

FRANKFORT—The Hogeland Buggy Manufacturing Co., of Daviess county, have filed articles of incorporation in the office of the Secretary of State. The capital stock of the company is fixed at $10,000. The stockholders are M. Hogeland and John Aregood.

MAINE.

LEWISTON—E. O. Millett is building an addition to his carriage shop on Pleasant street.

NORTH TURNER—Charlie Fuller has opened a carriage painting shop in the old chair factory.

UNION—One of Maine's most noted and her oldest carriage building firms is that of Wingate, Simmons & Co., founded in 1848 by William Adams. In 1855 Mr. Ziba Simmons entered the business and in 1858 W. M. Robbins joined, and the firm became known as the Wingate, Simmons & Co. A notable record of this firm is that all their old time competitors gradually passed out of existence until now they are the oldest carriage building firm in the State of Maine. Their trade extends from Canada to California, three carriages having been shipped thither last year. The secret of their success is "honest goods." In the village proper the plant consists of five buildings—a wood working shop 26 x 40, a trimming shop of the same dimensions, a paint shop 35 x 40, a repository 40 x 60, all two stories high, and a blacksmith shop 95 x 40. On the banks of the Georges river is their mill for wood turning. It is here unnecessary to speak of the personalities of the Messrs. Simmons and Robbins—two of Union's most distinguished and honored citizens, who have labored in partnership side by side for nearly fifty years, who both, born in Union, watched her grow from a mere settlement, to a prosperous community. They helped build the town and are in turn most highly esteemed by her citizens.

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MARYLAND.

BALTIMORE—Israel Griffith, builder, has the contract to erect the new addition to the carriage factory of Lewis Haslup on West Baltimore street after plans made by Thomas C. Kennedy, architect.

MASSACHUSETTS.

LEOMINSTER—Fred A. Pingree, manufacturer of carriage lamps, is a bankruptcy petitioner. He owes $500.17, with no assets.

NORTH CAMBRIDGE—Eugene E. McCarthy, wagon maker, has filed a bankruptcy petition. He has debts of $8,891.69, all unsecured. His principal creditor is E. Gormley, Somerville, for $3,000. He has no assets.

SALEM—An assignment has been filed at the Registry of Deeds in this city by which Washington I. Atwood, of the Atwood Co., manufacturers of carriage lamps, assigns to E. Ripley Sibley.

SPRINGFIELD—The B. L. Bragg Co. has moved into its new store at 29 Lyman street. For years this company has enjoyed an immense trade in farming supplies, carriages and horsemen's goods, and the growth in these lines forced the company to discontinue the household goods feature of its business and seek larger quarters for the proper display of its wares. The new store, with the Dwight street carriage repository and the Franklin street storage warehouse, gives the company unequaled facilities for the proper care of its immense business. The business was established in 1845 and for the past 23 years the company has occupied the building at 337 and 339 Main street. The B. L. Bragg Co.'s trade is by no means limited to the local field, but extends throughout all New England.

Messrs. McLane & Huebler, of Holyoke, have bought the personal property of the Brown Wagon Co. and have rented the factory, for the purpose of making and repairing wagons.

MICHIGAN.

FLINT—The report in the Detroit *Tribune* that an option has been given on the Durant-Dort Axle Works is without any foundation. New machinery is being added and the capacity of the plant will be doubled at once.

MENDON—Fire broke out in the engine room of the Shafer Wagon Works, on West Main street, on June 13, destroying the entire plant. Loss about $5,000; small insurance. John Shafer, proprietor, fell from a ladder, receiving internal injuries.

PONTIAC—The Pontiac Axle Co. is reported to have given an option, which will expire September 1, to the promoters of the $10,000,000 spring and axle trust of New York. The directors of the axle company are not desirous of selling except that they will make a handsome profit on the deal. The factory will be operated by the trust the same as at present in case the deal is consummated.

Messrs. Frank L. Perry and James S. Gray, of this city and H. C. Kudner, of Lapeer, are the promoters of another carriage factory here. Several meetings have been held of those interested, including Pontiac carriage men, and the deal is nearing consummation. The output of the factory, provided the deal goes through, will be high grade carriages and the factory will be as large or larger than any in the city at the present time.

MISSISSIPPI.

SARDIS—William Cutter, of Jackson, Mich., representing a large wheel and spoke factory of that city, has been in this city and vicinity for the past few days, having in view the location of a spoke factory. He visited the timber lands in the western portion of the county, and is much pleased with the quantity and quality of hickory timber that he found that is available for use in the manufacture of spokes and other such articles made by the firm he represents. It is quite likely that he will recommend to the company that they erect a factory in this city, and that they will act upon his suggestion. Should the firm decide to locate here the citizens of this city will co-operate with them in securing suitable location for the plant.

MISSOURI.

ST. LOUIS—Mechanics' Buggy Co., of St. Louis; capital stock, $12,500. Incorporated by John G. Shaffer, William Zinselmeyer, Frank Krois, Louis Remmert and John J. Edmondson.

William Young Carriage Co.; capital stock, $12,000, paid. William Young, 39 shares; William Salchow, 40; Samuel Furmage, 39; Charles H. Brace, 1, and Alfred J. Jex, 1.

The Mercantile Trust Co. has negotiated a lease to the Columbus Carriage & Harness Co., of Columbus, Ohio, of the five-story slow combustion building on the southeast corner of Nineteenth and Olive streets. Lease made for C. R. Scudder for three years at $4,500 a year. The approaching World's Fair and the location of St. Louis as a Southern and Western shipping point are responsible for this move on the part of the buggy company.

Work has been begun on the new factory of the Banner Buggy Co. at Main and Rutger streets.

WARRENSBURG—Rittman & Prussing, carriage works and stock, burned July 6; value, $4,000; partially insured.

NEW HAMPSHIRE.

DOVER—Jasper H. Randlett, the well known carriage manufacturer, who has been in business here for a great many years, has sold out to two well known young men, John Drew, of Durham, and Mr. Emery, of Berwick, who will conduct the business under the firm name of Drew & Emery. Account of stock has been taken and the new firm will take charge on July 1. Mr. Randlett retains the carriages which he has manufactured, and he will sell them at prices to suit the times. The new firm takes a lease of the plant for three years, and the stock which he had on hand for manufacturing. It is learned that they intend to make up-to-date carriages and to increase the business which has been carried on there to a considerable extent.

ROCHESTER—Alex. McDonald, who recently closed out his carriage business here, has entered the employ of Abbott & Downing, of Boston, carriage manufacturers.

NEW YORK.

EARLVILLE—The "Low-Down" Wagon Works at Earlville has added machinery and tools for putting rubber tires on to old wheels, and will soon be in shape, not only to furnish new wheels and tires, but will also do all kinds of repairing on rubber tired wheels.

NEW YORK—J. F. Goodrich & Co.'s exhibit of miniature Victorias and cabriolets continues to attract much attention. Every design on view is fresh from the factory at New Haven, and all the fashionable styles of the season are represented in the display at the Broadway warerooms.

The New York Wagon Co.'s sales of business and general delivery wagons have been fully up to the capacity of this concern, and the season's business is easily the best in the history of the house. At their show rooms, Eighth avenue and Thirteenth street, they are showing a capital lot of all kinds of vehicles.

The I. S. Remsen Manufacturing Co., of Nos. 740 to 750 Grand street, Brooklyn, report a very satisfactory week's business. The sale of carriages and wagons has been much better than in previous years. This firm also reports a big week's business in their harness department.

POUGHKEEPSIE—The blacksmith shop and carriage house of Sydney Austin, situated on a road running south from the New Hackensack road, just east of the driving park, were totally destroyed by fire on June 27. Mr. Austin lost all his tools and machinery, together with a stock of new wagons. He estimates his loss at $12,000, with only $2,000 insurance.

SYRACUSE—Harvey A. Moyer is building a large addition to his carriage factory in Wolf street. The new building will be used for a shipping room and paint shop, and when completed about September 1 will increase the capacity of the plant 25 per cent. At present Mr. Moyer is employing 330 men, an increase over last year, and as soon as the new building is completed employment will be given to an additional number of men. It is a brick building, 60 x 70 feet in dimensions and four stories high. It is located between the old paint shop and the factory which faces Salina street and in the center of the block bounded by Wolf, Exchange, Salina and Park streets. Attached to the large brick building there will be a frame wing, 50 x 60 feet, to be used for crating purposes. Mr. Moyer has been seriously handicapped for a year or more on account of a lack of room for shipping and painting purposes. Regarding the state of trade, Mr. Moyer said: "We are running our plant to its full capacity ten hours a day with 330 men, and still it is not an easy matter to keep up with the orders. Last year was the best year on record in the carriage business, and this year promises to discount it very largely. There is a steady increase in the demand for a better grade of wagons and the rubber tire vehicle is being used almost entirely. The market is in excellent condition and the trade never felt more encouraged than at the present."

NORTH CAROLINA.

GREENSBORO—A new corporation was chartered on June 11 by the Secretary of State. It is the Carolina Spoke & Bending Co., with its principal office at Greensboro. The capital stock is $30,000, with the privilege to increase it to $100,000, and the incorporators are J. Elwood Cox, of High Point; J. G. Foushee, J. H. Whitt, G. A. Smith, C. P. Sellars and J. E. Logan, of Greensboro. The business is to deal in lumber, operate saw and planing mills, conduct a wood working plant, manufacture spokes, hubs, rims, handles, pickerstickers, shuttles, bobbins, skewers, carriages, buggies and other vehicles. It can purchase lands of all kinds in the United States, territories, colonies and possessions, as the charter permits.

OHIO.

CINCINNATI—The Irwin-Hunter Carriage Co. changed its name to the Irwin & Shaw Carriage Co. Wm. G. Irwin is the president.

The Turnbull Wagon Co. has sued the T. T. Haydock Co. and the trustee for its creditors, asking a receiver for the real estate at Plum and Charles streets, where the company is located, to collect the rents and sell it on terms to be fixed by the court. The Haydock Co. made an assignment some years ago, which was afterward raised. Then a trustee for the real estate was appointed, as was also a committee for the creditors, and the property was leased to the Haydock Co. An effort was made to sell it at $85,000, but without success. It is claimed another sale should be ordered at a lower price, but as there are differences as to this between the members of the creditors' committee, the Turnbull Wagon Co., a creditor of the Haydock Co. for $12,483.12, wants a receiver for the real estate and its sale, but

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not a receiver for the company, as has been erroneously stated. Attorney Philip Roettinger filed the suit for the creditors.

Incorporated, the United States Vehicle Manufacturers' Association, of Cincinnati; incorporators, A. G. Brunsman, Frank J. Enger, G. H. DeGolyer, Henry Rattermann and A. R. Scovill.

TOLEDO—The Milburn Wagon Co. have closed a contract for equipping its power plant with electricity, and, after September 1, the use of steam will be abolished.

OREGON.

PORTLAND—Work on a spoke and felloe factory to be operated by the Robertson-Manning Co., has been commenced, and will be rushed to completion as rapidly as possible. Oregon oak will be used for the spokes and felloes, and Oregon ash will be used in the manufacture of other articles. The factory will also turn out ax handles.

PENNSYLVANIA.

COLUMBIA—C. C. Kauffman, manager of the East Columbia Land Co., has received a letter from the Bulette Carriage Works, of Delta, Pa., asking what inducements would be offered them to locate here. They employ fifty people, and would double that number here. They were offered free ground, water and railroad facilities.

DELTA—A bill in equity has been presented to His Honor Judge Bittenger, asking for the appointment of a receiver for the Bulette Carriage Co., of Delta. The bill was prepared by Chas. A. Hawkins and Jere S. Black, and names W. S. Bulette and certain creditors of the company as the petitioners. Humphrey R. Lloyd, vice-president of the People's National Bank, of Delta, and E. P. Blain, one of the directors, were appointed receivers.

ERIE—Henry Mason Tateman, a carriage maker, of Erie, Pa., asks to be declared a bankrupt. He gives his liabilities as $13,377.87 and his assets as $147. Of the liabilities, $10,069.47 is scheduled as secured and $3,308.40 as unsecured. His assets, he claims as exempt. His household goods he values at $72 and other personal property at $75.

GLEN ROCK—The charter granted to the "Cosmo Carriage Co. of Glen Rock" has been entered for record at the office of Recorder Bowman. The purpose of the said corporation is the manufacture of carriages, locomobiles and other vehicles and parts thereof and articles of commerce from metal or wood, or both. The business is to be transacted at Glen Rock. The amount of capital stock is $1,000. The directors are George F. Bortner, Shrewsbury; Edgar D. Bortner, Glenville; George M. Gantz, Samuel K. Diehl and Wesley C. Koll, of Glen Rock. Samuel K. Diehl is the treasurer.

HARRISBURG—The Anthracite Wagon Co., of this city, has won a large contract in the face of keen competition from New England and New York firms, and the Market street plant will be busy on the work for some time. The contract is for thirty-eight large sized wagons for the Hygienic Ice Co., of Boston. The wagons are wanted as soon as possible..

MT. JOY—A fire in the carriage works of Henry Nolty, Jr., on May 11th, destroyed the entire stock, including nearly fifty wagons, old and new; materials, tools, etc. Mr. Nolty estimates his loss between $6,000 and $7,000, on which he has an insurance of $2,500.

READING—The Keystone Wagon Works has just made a shipment to the Pacific coast. The railroad officials kindly provided one of the largest cars made, into which were placed fifteen paneled-up fancy business wagons and seven runabouts. This is the largest number of vehicles that could be put in one car and materially lessens the freight per wagon to San Francisco. The works are running to their fullest capacity. The company is arranging for a big exhibit at the carriage exposition, which will be held at the Grand Central Palace, New York, October 14-19, by the National Carriage and Harness Retail Dealers' Protective Association.

Wetherhold Bros., corner Court and Poplar streets, carriage and wagon builders, finished a spring wagon for Wm. Endy, of Temple; cut under carriage, for C. W. Edwards, music dealer, 414 Penn street; one no-top buggy with rubber tires, for George B. Miller, Hamburg; Corning top buggy for collector's use, for Muhlenberg Brewing Co.; drop axle Corning buggy, narrow track, for George Spatz, butcher, Pottstown; large wagon to haul 100 baskets of peaches at a time, for Long & Johnson, proprietors of the Mt. Penn fruit farm; narrow track piano box top buggy, Charles E. Angstadt, Sixteenth and Perkiomen street, and a rubber tire runabout for J. E. Kalbach, of Sheridan. They employ forty-six hands on full time.

WEST READING—F. R. Himmelberger's new carriage shop, at Second and Cherry streets, is nearing completion, and presents a fine appearance.

YORK—The York Carriage Co. is making a carload shipment of delivery wagons to South Africa, their destination being Cape Town. From that point they will be taken inland by the purchaser and disposed of. The company has quite a trade with South Africa, and has built several shipments of both express and light work vehicles. Most of this work is built on specifications. Besides the South African shipment, two other export orders are being filled, one for Trinidad and another for London. Recently the company shipped a delivery wagon to Liverpool and some time later the purchaser wrote to Manager Ryan that the wagon was very much admired in that city, because of its lightness and beauty. Most of the English built wagons are of cumbrous design.

The Martin Carriage Company is making preparations to build a new boiler, engine and pipe room at the factory. The annex will be built of brick, and will be located on the west side of the present building.

The York Carriage Company has just purchased additional property on which they will at once begin to build an addition to their factory.

RHODE ISLAND.

WESTERLY—Business seems to be on the boom at the carriage shop of C. H. Holdredge, on West Broad street, judging from the fact that a number of new men are employed there, and the shop is compelled to run overtime.

TENNESSEE.

NASHVILLE—J. J. Newson, in answer to the petition of the Brighton Buggy Company, says he is not a person against whom a creditor's petition in bankruptcy can be filed, because at date of filing petition and for some time previously he was engaged chiefly in farming and tillage of the soil.

KNOXVILLE—N. L. Hastings & Son, Roy, will establish a wagon shop in the building near McKenzie, Everett & Co.'s livery stable.

VERMONT.

BURLINGTON—The carriage business of William Smith, located at the corner of St. Paul and King streets, is a good illustration of the fact that there is always a demand for a superior article in any line of staple articles. Mr. Smith's carriage manufacturing is a success, and he makes only the best. A large force of hands are constantly employed at the spacious new shop in connection with the repository, where prospective customers may step in and see the carriages they propose to purchase being put together.

WISCONSIN.

MILWAUKEE—The Cribb Carriage Co. has made a voluntary assignment to Emory M. McVicker, who has given a bond for $10,000, which represents the approximate value of the assets of the company. The company's former quarters, at 136-140 Second street, are now being used by Gimbel Bros. as a carpet and general storeroom.

Wants.

Help and situations wanted advertisements, one cent a word; all other advertisements in this department, 5 cents a word. Initials and figures count as words. Minimum price, 30 cents for each advertisement.

SITUATIONS WANTED.

Contract desired to represent responsible house, for Baltimore, Washington and Philadelphia trade. Salary not less than $1,500 annually and commissions. Can give bond and references. Address "SUCCESS," Box 72, care THE HUB.

As foreman of paint shop in carriage factory. Have had over 30 years' experience at my trade; know all its branches. Thoroughly posted on mixing colors, and on all other materials used in the business. Have had full charge of shop for over 20 years; ran one large shop over 15 years. Best of references. Competent in handling men. Address "X. Y. Z.," care THE HUB.

HELP WANTED.

Wanted—One or two good body makers to build depot wagons by the day or contract. Address with references, "P. G.," Box 71, care THE HUB.

Wanted—Painter foreman to correspond with a view to contracting. Good man to take charge of paint department in factory with output of 8,000 to 12,000 jobs per annum. First class position, good salary. Best of references required. Address F. A. AMES & CO., Owensboro, Ky.

Wanted—Hustlers to secure new subscribers for THE HUB. A good chance to make money easily. Subscription price, $2.00 a year. Liberal commission paid. Address Subscription Department, THE HUB, 24-26 Murray street, New York.

PATENTS.

PATENTS—H. W. T. Jenner, patent attorney and mechanical expert, 608 F street, Washington, D. C. Established 1883. I make an examination free of charge, and report if a patent can be had and exactly how much it will cost. Send for circular.

FOR SALE.

Wanted—The trade to know that I am constantly making new designs for carriage builders and furnish working drawings with all details fully shown. D. W. MILLER, 2414 Gilbert avenue, Cincinnati, O.

Solid rubber tire patent. Entirely new principle. Cannot get off the rim. Economical. Experienced tire men say it is the best they have ever seen. For particulars, address "RUBBER TIRE," care of THE HUB.

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COLOR SECRETS.

No. 43.—Our Specialty.

We make colors for two classes of customers—those who know what they want, and those who don't.

We make two kinds of colors—everything for the general market, and everything for special demand. We have mastered the common needs of color-users, and we are always devising new things to suit a fancy.

If you know what you want—know that you want any old standby—we have it, waiting for you, the very best that can be made. If you want a novelty; give us your idea, and we'll translate it into the real thing. A hundred chances to one we thought of it first, and have it already prepared.

If you have a dim sort of notion, a floating dream—well, a part of our business is to interpret dreams. We live in the color world, think about colors all the time; and we can probably tell you just what is the substance whose shadow has crossed your vision.

Our specialty is that nothing escape us. We did not go into the color business to piece out the varnish business, but to exhaust the possibilities of that distinct trade: but our varnish experience proved of great benefit in solving the color problems. Varnishes and colors are close kin—but you don't want any family quarrels. We have exercised great care, in learning what colors go harmoniously with what woods and uses; and we make no charge for the information. Pardon us for knowing what we can do. We have abundantly paid for the knowledge, with time and patience and care and cash.

MURPHY VARNISH CO.

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AN EXCELLENT INVESTMENT!

THE

German Secret Process Steel Ball Company

("Deutsche Guss-Stahl Kugel Fabrik Actien Gesellschaft")

CAPITAL, $1,000,000

Divided into 6,000 shares of common stock and 4,000 shares of 5 per cent. preference stock, in shares of $100.00 each.

BOARD OF DIRECTORS.

MR. PETER MILNE, C.E., A.A.S.C.E. (Chairman).

HERR WILHELM HOPFLINGER, M.E., Founder of the Guss-Stahl Kugel Fabrik Actien Gesellschaft, Schweinfurth, Germany (Chief Engineer).

MR. BYRON A. BEAL, Equitable Life Assurance Society, New York (Treasurer).

COL. JOHN R. NUGENT, Morton House, New York.

MR. E. R. GRANT, Treasurer Consolidated Exchange, New York City.

HON. W. P. SNYDER, former Special Assistant Attorney-General U. S. A.

JAMES VIRDIN, Recorder of Deeds, Dover, Delaware.

MR. JOHN O'NEILL, Merchant, London, England.

MR. E. D. ACKERMAN, New York City.

MR. STEPHEN H. B. JACOBS (Secretary).

BANKERS, Atlantic Trust Company, New York.

PROSPECTUS.

This Company is organized under the laws of the State of Delaware as the American Company representing the parent German Company of the same name, and $320,000 of its share capital is held by the said parent concern.

General Purpose: This Company has for its purpose the manufacture of Steel Balls, Cups and Cones, and fittings for Ball-Bearings as applied to numerous purposes. It will operate all the secret processes and patents of the parent company and have sole right to supply the American Market.

The Steel Balls and Ball-Bearings manufactured under these processes and patents are recognized as the only perfect Steel Balls and Bearings available for general use in Bicycles, Automobiles, Heavy Vehicles, Railway Cars, Engines and all kinds of heavy machinery. They are practically indestructible. Placed between two pieces of hardened tool steel and submitted to enormous pressure, by strokes of a steam hammer, they penetrate the steel without suffering any damage. No other concern in the world is able to produce satisfactory Balls and Ball-Bearings, available for heavy bearings, or that will endure for any length of time, and the market is practically unlimited.

Prospects: The parent Company was organized ten years ago on a small capital, and has, during the period of its existence, extended its works until it has become one of the richest and best-known concerns of Europe, and in addition to paying for the enormous outlay necessary for buildings and machinery in the extension of its business, it has paid in dividends nearly $2,000,000, all out of profits.

The prospects of the American Company are even more favorable, as the market has already been established by enormous imports in face of the 45 per cent. customs tariff, and the manufacture of the Company's products in the United States will be made with the advantage of capital adequate to the immense demand already existing, which is but a beginning of the business to be done.

Remarkable Advantages: The uses to which the hard Steel Balls and Ball-Bearings may be applied are without number, and several important patents in the designs of such Bearings are the property of the Company, enabling the principle of the Ball-Bearing to be applied readily to existing vehicles, tools and machinery, and the saving of power is enormous. A railway car that requires 193 lbs. pressure to start it with the ordinary journals is started with a power of 112 lbs. pressure when mounted on these Ball-Bearings, and all vehicles and all machinery that have the principle of the Ball-Bearing applied to them have the same advantage. In addition to this the Ball-Bearing requires no lubrication, the use of oils and waste being entirely dispensed with, and the journals themselves lasting much longer. What is known as a "hot box" or a "hot journal" becomes an impossibility. It will be seen by this that a locomotive would be able to draw 50 per cent. more cars when such cars are equipped with Ball-Bearings over the number possible where the old journals are used, with immense saving of oil and waste.

The same principle applies to freight trucks used for street traffic. Two horses can do the work of three if a wagon be equipped with the Ball-Bearing Attachment, which can be applied to existing axletrees at a nominal cost.

Speed is always a desideratum, and the use of the Ball-Bearings is an absolute necessity in reaching the highest excellence in this respect, whether it be on a typewriter, a bicycle or a railway train.

Perfect Ball-Bearing is the only true bearing now recognized by mechanical science, and is rapidly coming into use for all classes of machinery.

Mr. Höpflinger, the founder of the Parent Company, is personally engaged in organizing the plant of the American Company, embracing the construction of machines and machinery sufficient to produce 2,000,000 Steel Balls per week, and a commensurate amount of Ball-Bearings, and the erection of what is destined to be the Model Steel Ball Plant of the World.

The capital stock is extremely small, considering the profitable character of the business and its scope, and it is confidently expected that very large dividends will be available from the first, and that the shares will become extremely valuable in the near future.

In addition to the dividends that will be available from the operation of this Company as the Parent Company for America, it has been decided to form Branch Companies to handle this Company's product, and three-fifths of the stock of such companies will be distributed to the holders of stock in this Company pro rata without further charge or cost to them.

One thousand shares of the common stock are now offered to the public at par, the balance having been taken up by the Directors and their friends.

Stock is payable 10 per cent. on application, 40 per cent. in 30 days and the balance in 60 days.

Forms of application for stock may be had of **THE ATLANTIC TRUST CO., Wall Street, corner William Street, New York City,** to whom all remittances should be made.

The German Secret Process Steel Ball Company.

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BURR PATENT WHEEL



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BURR WHEEL CO.

CAMPBELL AND PARK AVENUES,

... CHICAGO, ILL.

Advantages in the

BURR WHEEL

Large Hub, suitable for any kind of Axle.

Long and Heavy tenons on spokes.

Long shoulders on spokes.

A flanged wheel with staggered spokes.

A rivet on each side of every spoke; none passing through the spokes, using twice the number of rivets used in other makes of wheels.

A light wheel, both in weight and appearance.

A wheel that will stay in dish.

A wheel that will stand in the hub.

Easy to repair. Three times stronger at the hub than any other wheel made.



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WHEELS SARVEN, WARNER,

and WOOD HUBS, Heavy and Light. Heavy Wheels for Business Wagons a Specialty.

MANUFACTURERS OF ★ BRANDS OF

CARRIAGE AND WAGON WOOD STOCK,

RIMS, SPOKES, HUBS, ETC.,

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SEND FOR CATALOGUE AND PRICE LIST.

The Hickory Nut Brand is made of Second Growth Hickory Rims, Spokes and Elm Hubs.

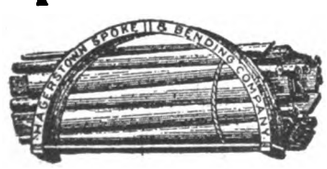
The Acorn Brand is made of Second Growth Oak Spokes, Bent Oak Rims or Sawn Felloes. Thoroughly Seasoned Stock.

G. W. SEBOLD, Pres't J. H. BEACHLEY, Vice-Pres't F. S. BARRICK, Sec'y. S. A. MUNN, Treas. A. S. HARING, Supt.

The Hagerstown Spoke AND Bending Co. Hagerstown, Maryland, U. S. A.

MANUFACTURERS OF

Spokes and Rims

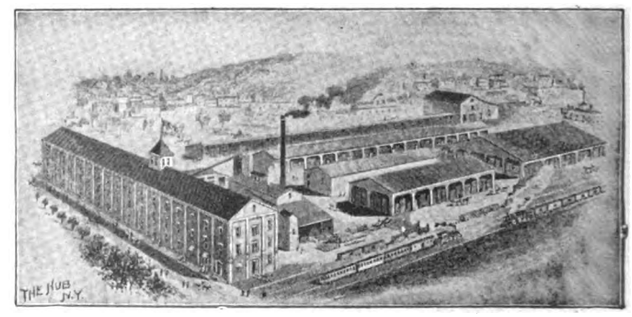


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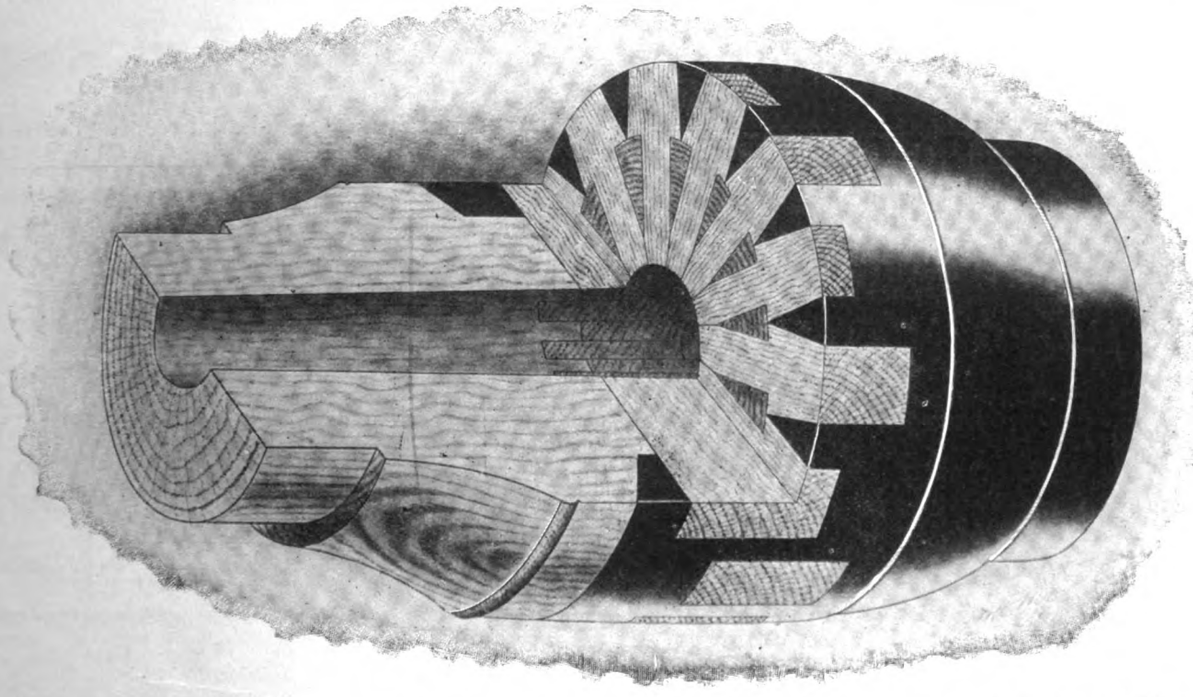
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OUR WHEELS ARE THE BEST.

WE HAVE ONE OF THE MOST COMPLETE PLANTS FOR PUTTING ON STEEL TIRES IN THE UNITED STATES. WE ALSO APPLY SOLID RUBBER AND PNEUMATIC TIRES.

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WE SELL WHEELS COMPLETE. WE USE THE KELLY-SPRINGFIELD SOLID RUBBER AND THE CLARK VALVELESS PNEUMATIC TIRES. TWO OF THE BEST TIRES MADE.



OUR LEADER IS THE SCHAD HUB

IT IS THE HANDSOMEST AND STRONGEST HUB ON THE MARKET.

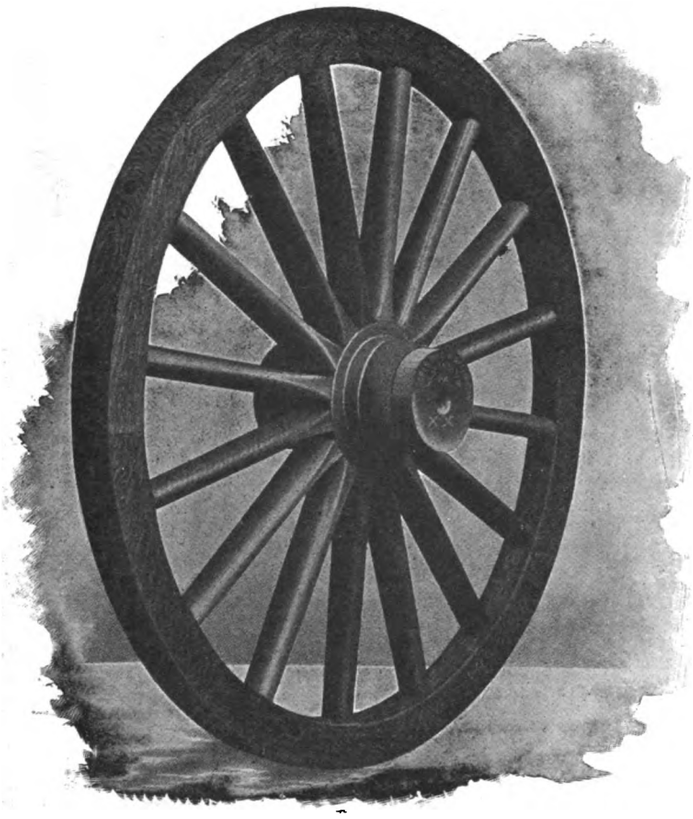
THE SPOKES CANNOT GET LOOSE IN THE HUB.

AVOCA WHEEL CO.

AVOCA, N.Y. U.S.A.

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WESTCHESTER, P.A., U. S. A.

Makers of...

WHEELS

For

Carriages, Automobiles, Business Wagons and Trucks.

Warner, Sarven, Kenney, Sweet, Wood Hubs

FINE CARRIAGE WHEELS.

E. FLICKINGER,
President and Manager.

Capacity 500 Sets per day.

OUR TIRE PLANT ENABLES CARRIAGE AND WAGON MANUFACTURERS TO HAVE THEIR WHEELS TIRED BY EXPERIENCED WORKMEN. CAPACITY OF TIRE DEPARTMENT, 250 SETS PER DAY. CORRESPONDENCE SOLICITED.

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MANUFACTURERS.
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HIGH GRADE STOCK A SPECIALTY.

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WHEELS

WHEEL MATERIAL AND BENT WOOD WORK

The Wheel & Wood Bending Co.,

Send for Catalogue. BRIDGEPORT, CONN.

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New Haven, Conn., U. S. A.

Ask us to quote on Carriage and Coach Lamps, Axle and Saddle Clips, Oval and Flat Corner Irons, "Excelsior" Curtain Fasteners,

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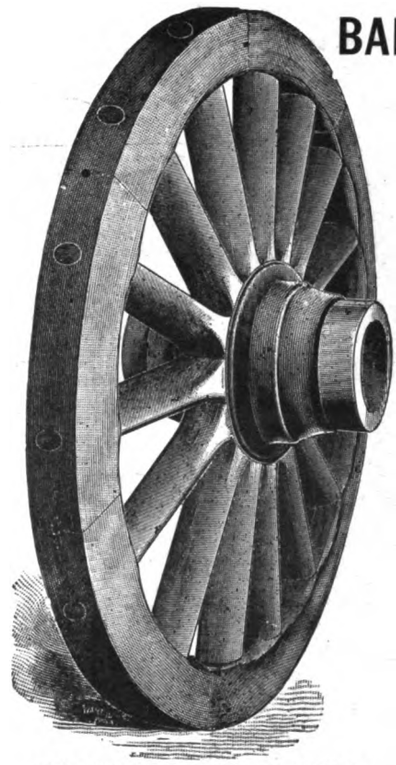
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WE ARE HEADQUARTERS FOR ABOVE.

LARGEST VARIETY OF LAMPS FOR

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MANUFACTURERS OF

Warner, Sarven, Plain, Compressed Band and Sweet's Hub

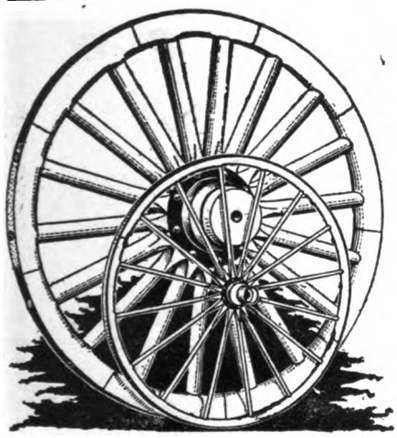
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ALL SIZES.

With or Without Steel, Iron or Rubber Tires.

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Manufacturers of

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Wheel Stock and Hard Wood Lumber.

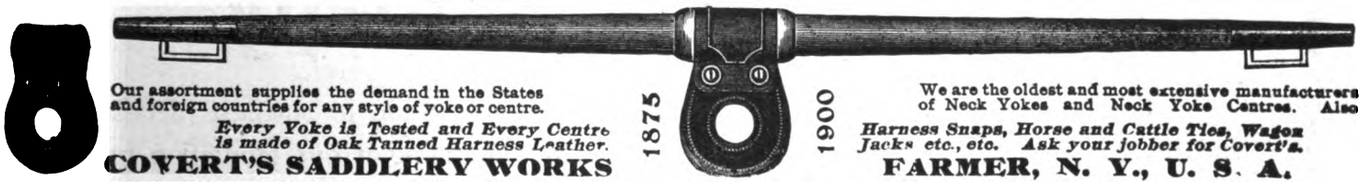
Don't Worry

If you have trouble getting finished SARVEN PATENT HICKORY SPOKES 1⅜ and under, write us. Our prices will *surprise* you. Of course we make all kinds. Write us now.

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KUTTAWA, KY.

THE WOODS is full of CHEAP NECK YOKES and NECK YOKE CENTERS, but when a carriage manufacturer wants a good, safe yoke for his own use he always buys COVERT'S. You should insist upon it and accept no other.



Our assortment supplies the demand in the States and foreign countries for any style of yoke or centre.

Every Yoke is Tested and Every Centre is made of Oak Tanned Harness Leather.

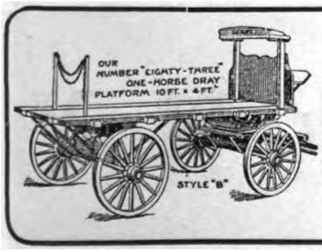
COVERT'S SADDLERY WORKS

1875 — 1900

We are the oldest and most extensive manufacturers of Neck Yokes and Neck Yoke Centres. Also *Harness Snaps, Horse and Cattle Ties, Wagon Jacks etc., etc. Ask your jobber for Covert's.*

FARMER, N. Y., U. S. A.

INEXPENSIVE, SERVICEABLE, CONVENIENT.

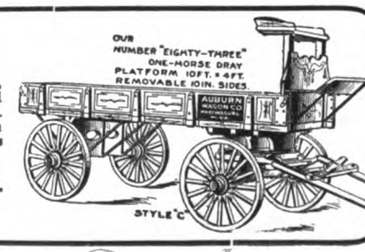


Just the "Trick" for all kinds of General Hauling. Carriages, Cotton, Hardware, Feed, Baggage, Machinery, etc., etc. Made in 3 styles, several sizes; tilting seat; also furnished with removable 10-inch sides and ends. Light enough for one horse; strong enough for two-horse loads. Platform stands 36 inches from ground and clears the wheels. **Write for particulars and prices.**

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BUILDERS OF FARM AND TEAM WAGONS.

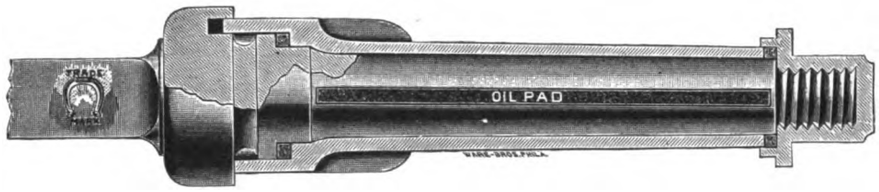
A special rebate will be allowed those who mention THE HUB in writing



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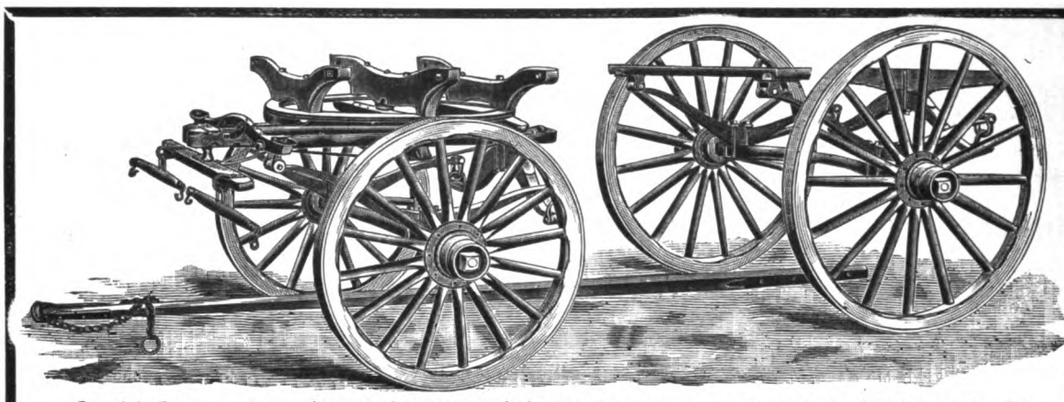
Manufacturers of "Collinge Collar" and other styles of Axles for "Long Distance" use.

Also Manufacturers of the best "Concord Express Axles."





SPEARS AXLE CO., WHEELING, W. VA., U. S. A.



Complete Gears as shown above, ready to receive body, for light and heavy work, can be furnished promptly. In ordering give full specifications, or such description as will enable us to make up specifications. Dealers in wagon materials will quote prices on our gears.

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THE SELLE GEAR CO.

AKRON, O.

KEEP YOUR EYE ON US.

We are just closing our first **Quarter of a Century,** *as spring makers. Very few changes or improvements have been made by any one in springs.*

Watch Us *enter the second quarter of the century very soon.*

We are going to revolutionize the business. Write us and we will give you "A Tip."

THE HESS SPRING & AXLE CO., CARTHAGE, OHIO.

Hartford Axle Company.

Good Axles are the result of experience, careful attention to smallest details, and the constant desire to improve. The continual upbuilding of our reputation has been guided by these principles, and a trial of our work will convince you of the excellence of our product. We make all styles, including the Brewer.

- - Dunkirk, N. Y.

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THE TRIAD SPRING

MANUFACTURED BY

THE TUTHILL SPRING CO.,

CHICAGO, ILL.

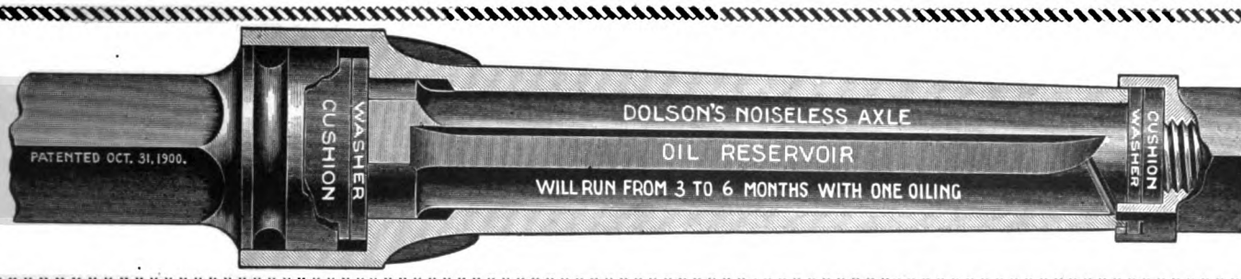
is superior to any other triple elliptic Spring yet produced.

1st. The shape of the spring permits it to work freely and in unison, and even when forced to its fullest capacity.

2nd. The upper and lower spring will pass each other and become a straight line without buckling or breaking away.

3rd. There is no wear on bolts, and the couplings are so constructed as to form a perfect cover for the spring ends.

4th. When painted the triad spring will show no broken paint joints in operation. Give it a trial.



Dolson's Noiseless Axle

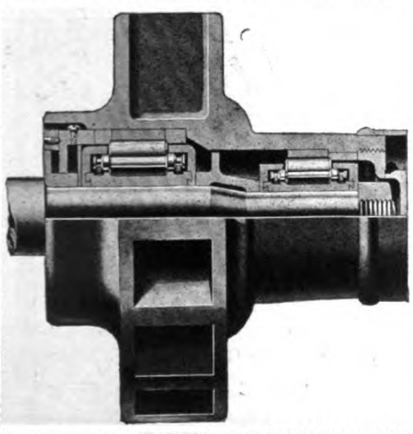
THE GREATEST IMPROVEMENT ATTAINED IN AN AXLE

IS absolutely noiseless, even though the washers have become badly worn. This Axle is constructed with a cushion in the collar and the nut. These cushions relieve the wheels from sudden jars. The fibre washers rest against the cushions and are so constructed that they do not revolve. The fibre washer which is contained inthe nut when in place rests against the shoulder of the arm and the point of the box. The spiral groove at the point of the arm prevents the exit of oil. The peculiar shaped groove on the top of the Axle collects the oil from the box as the wheel revolves, and the "V" opening allows it to escape. This Axle is not complicated in its construction—simply put on the nut and screw it up. It is neat and tasty in appearance, will run from 3 to 6 months with one oiling and is the only Axle specially adapted to rubber tire vehicles, as it will not rattle or jar under any circumstances.

FOR FURTHER PARTICULARS, AND PRICES, ADDRESS,

Liggett Spring and Axle Company,

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American Roller Bearing Co.,

OFFICES AND FACTORY:

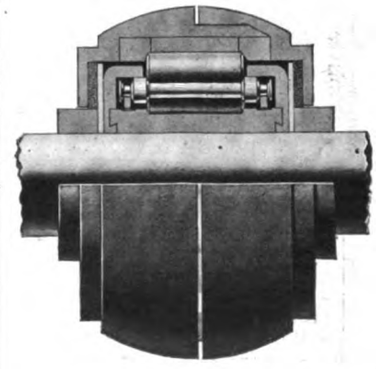
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Hubs, Wheels and Axles for all kinds of Carriage, Automobile, Wagon and Heavy Truck work.

Also single bearings for Shafting, Motors, Sheaves, Car Bearings, Automobile, Driving Axles, etc.

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WESTERN DEPT.,
H. Franklin Peterson,
164 Lake Street,
CHICAGO, - - - ILL.



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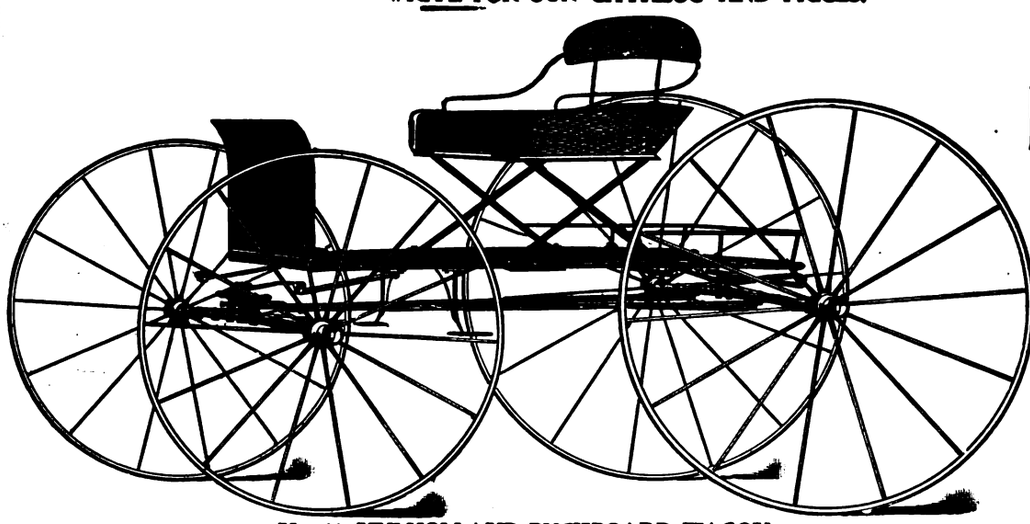
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Is made by using THE MULHOLLAND SPRINGS.
The Popular Vehicle from Maine to California.

We can furnish you the complete job in the white, and make a specialty of furnishing the slat bottom part with springs attached. Or sell the springs alone to those who desire to manufacture the wagon themselves.

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No. 44. MULHOLLAND BUCKBOARD WAGON.

MULHOLLAND SPRING & GEAR CO.

DUNKIRK, N. Y.

THE OLD RELIABLE



OUR FACILITIES enable us to furnish our IRONED UP SETS BETTER and AT LOWER PRICES than you can produce them, no matter how many or how few you make.

BETTER INVESTIGATE THIS.

THE J. A. AND D. P. COOPER

STRUTHERS, OHIO. U.S.A.

RECOGNIZED LEADERS and the only PRACTICAL CARRIAGE MAKERS in the GEAR WOOD TRADE.

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CONSTRUCTION AND MATERIAL

ARE POINTS WE ARE PROUD OF IN THE

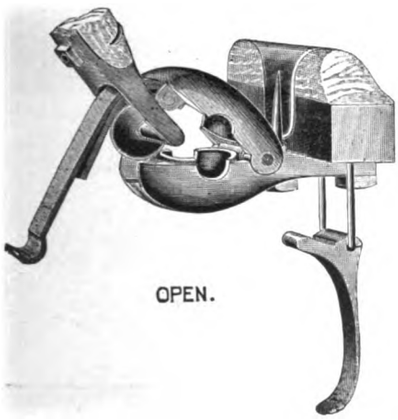
MULHOLLAND SHAFT COUPLER.

CONSTRUCTION.

THE Mulholland Coupler is Quick Shifting, Ball-Bearing, Leather Bushed. The Bushings are cemented into jaws and lined with Graphite. It has a non-breakable spring of uniform width and thickness, and a dirt proof flange and interlocking device. It takes up its own wear.

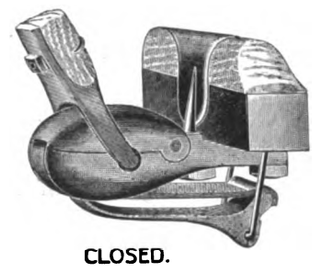
MATERIAL USED—ALL STEEL.

THE Shaft and Pole Ends are forged from Bar Steel. The Springs are of Crucible Steel, while the Jaws, Levers, etc., are of Bicycle Steel. The STRONGEST, and it may be well to state the most EXPENSIVE materials used in Shaft Coupler construction.



OPEN.

THIS IS WHAT MAKES THE MULHOLLAND the Most Perfect Shaft Coupler on the market. : : : : : :
A sample pair will convince you of its merits. : : : : :



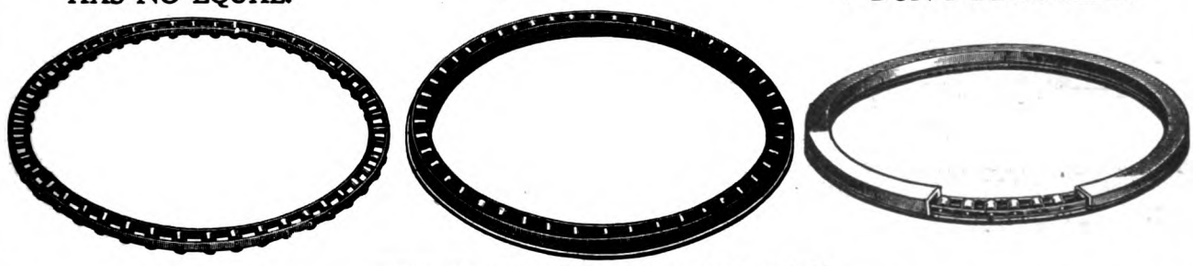
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Mulholland Spring Co., Dunkirk, N. Y.

THE NIELSON
Roller-Bearing Fifth Wheel.

is the only PERFECTED and PRACTICAL ROLLER-BEARING FIFTH WHEEL on the Market to-day.

HAS NO EQUAL. DON'T BE FOOLED.



WHY THE NIELSON IS THE BEST.

It is the product of a practical wagon builder, who has made a careful study of his trade and the necessity of developing something new in the way of a fifth wheel that would overcome the friction caused by the old circle in use on all kinds of platform vehicles. The present fifth wheel is the outcome of years of experiment, and contains all the good features lacking on other fifth wheels. The rollers, while an important part of the Nielson patent, without the other features, would be as worthless as some others that are offered as "the best."

Don't let anybody tell you that So and So's Roller Bearing Fifth Wheel is just as good as the Nielson.

Roller-bearings, like ball bearings, to prove of value must be properly housed. This is one of the greatest practical points on the Nielson, as it is constructed so that neither dust nor the elements to which fifth wheels are subject can affect the rollers.

As the rollers overcome all friction, the use of oil, grease or other lubricants is obviated, and thus when once the Nielson is attached to a vehicle, the user need give this part of the vehicle no further thought, as it will outlast any vehicle. It always works easy, and never gets out of order. No worry about broken shafts or poles, as the Nielson turns easily under the heaviest load. It is a godsend to dray horses, as well as to the users of vehicles for mercantile purposes, as the Nielson not only saves the horses, but prolongs the life of the vehicle.

YOU WANT THE BEST. GET THE NIELSON.

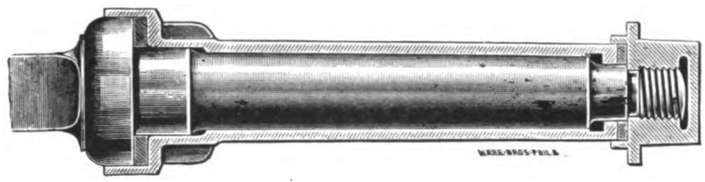
Ask your dealer or write for full particulars to

CHRISTEN NIELSON, 745 Third Avenue, BROOKLYN, N. Y.

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Doctors' Special Axle.

This is the finest Axle on the market for light and medium weight Carriages.

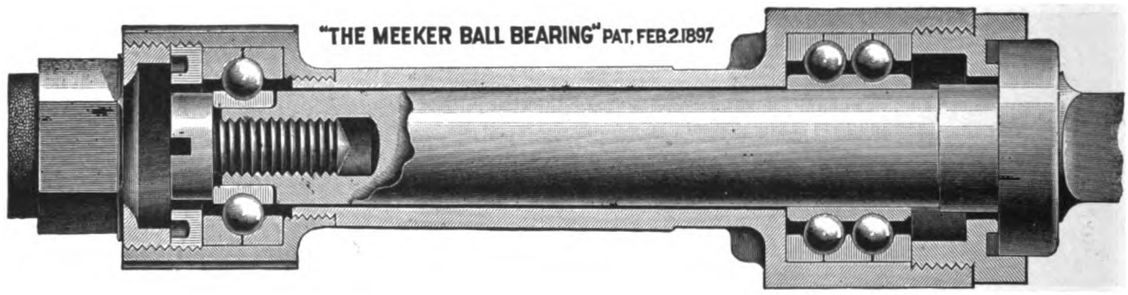


In it there is more value for the money than in any other at any price. Full particulars sent on application.

To it, when desired, we can at a small extra cost apply the Brewer Longitudinal Axle Lubricator, which is the simplest device known for continual lubrication, and has the added merit of not weakening either arm or box by the removal of metal at vital points and does not allow oil to leak out.

Dalzell Axle Co., South Egremont, Mass.

THE MEEKER BALL BEARINGS



Cheapest! Because they are the best. All sizes built in proportion to the work required of them. Write for our Catalogue of Carriage Specialties

LOW WOOD HUB AND SARVEN WHEELS.

The Best Wheels Made, with Pneumatic Tires and Ball-Bearing Axles, for Runabout Wagons and Automobiles.



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WE SELL....

SOLID, CUSHION and PNEUMATIC TIRES.

Empire Ball Bearing and Plain AXLES.

WIRE and WOOD WHEELS.

Vehicle GEARS.

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We will.... Exhibit at

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If you buy before receiving our proposition you will lose MONEY.

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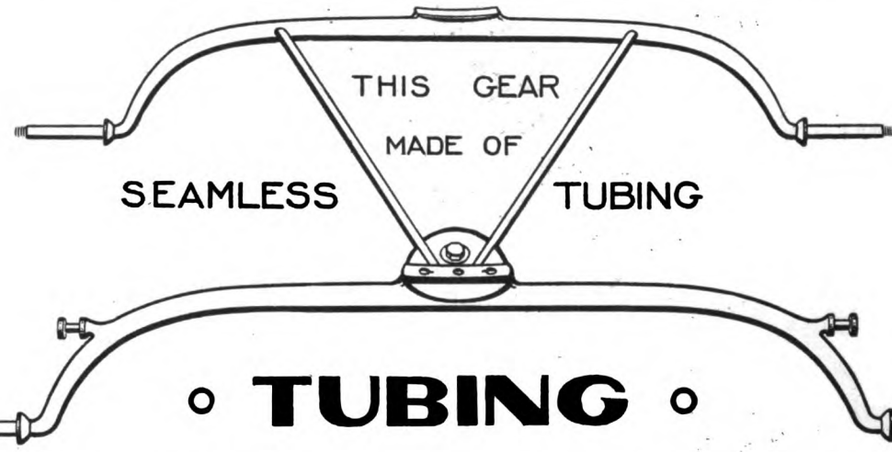
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WE ALSO SUPPLY

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FOR ALL PURPOSES.

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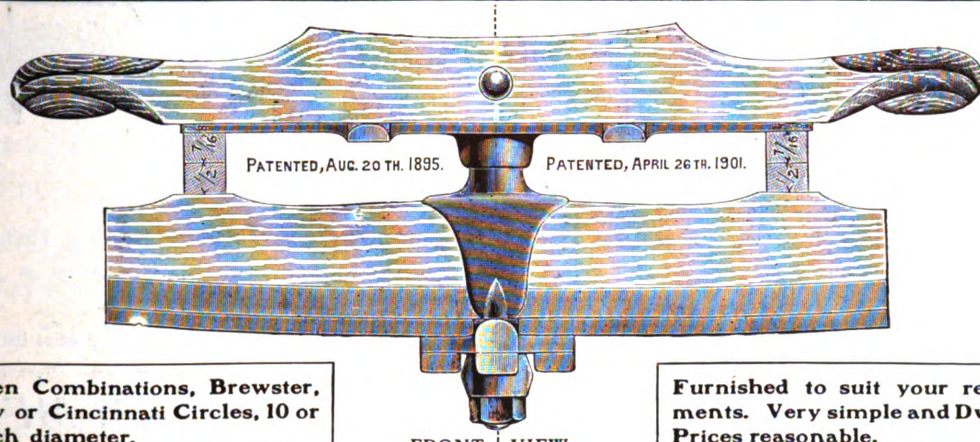
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THE ROOKERY
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OVR IMPROVED 1901

REAR CLIP KING BOLT GEAR SETS



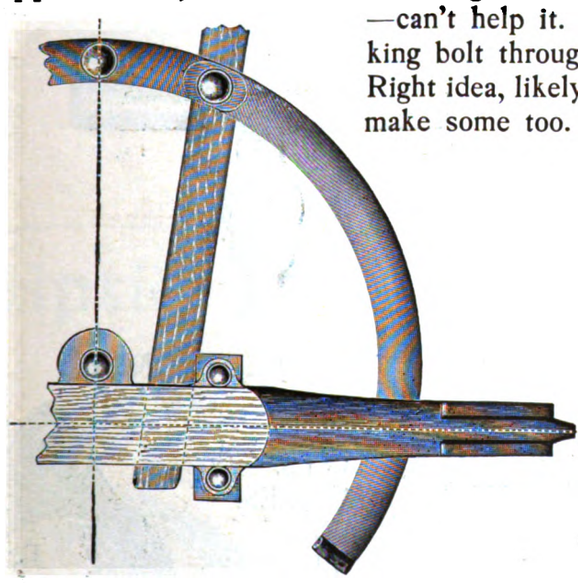
Sixteen Combinations, Brewster, Derby or Cincinnati Circles, 10 or 12-inch diameter.

FRONT VIEW

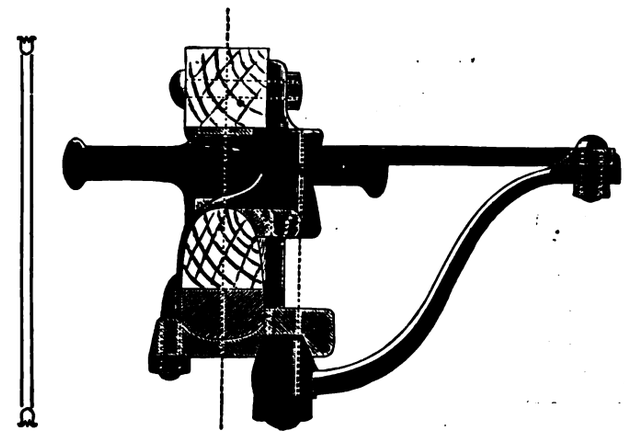
Furnished to suit your requirements. Very simple and Durable. Prices reasonable.

FOR BUGGIES AND SURREYS

We are getting in touch with the trade more every day. Just look at that front view appearance—just the same as a regular king bolt. Like that? Manufacturers see the point—can't help it. It appeals to them. Just notice—there is no king bolt through the head block or spring to break the paint. Right idea, likely to save a lot of money. Give us a chance to make some too. Another good idea.



TOP VIEW



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Just try one sample. You will be convinced we have something fine. A fine "Working Chart" for you to get your gears made to, sent by mail just for the asking. Correspondence solicited.

THE D. WILCOX MANUF'G CO.

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Wire Wheels

Ball Bearing, Long Distance, for Cushion, Pneumatic or Solid Tires.

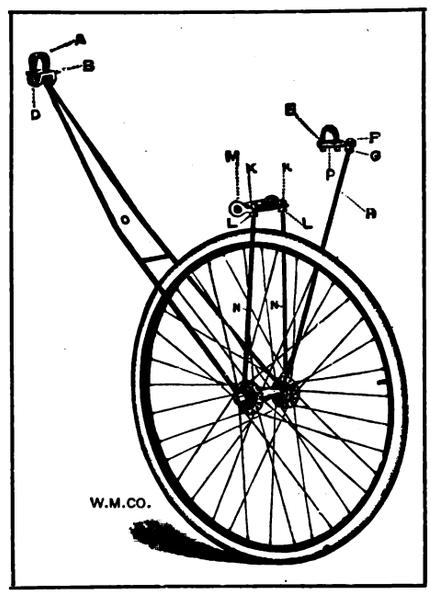
Bike Wagon Axles and Forgings.

Ball Bearing, Long Distance, for any Weight Job.

Ball Bearing Bushings . . . . . .

Long Distance Boxes. . . . . .

Interchangeable, with Wire Wheels on our Axles.



Sulky Wheels and Attachments.

Change over any old style High Wheel Sulky to Ball Bearing Wire Wheels, with only a wrench.

The Most Complete Line Made.

"The Name is a Guarantee."

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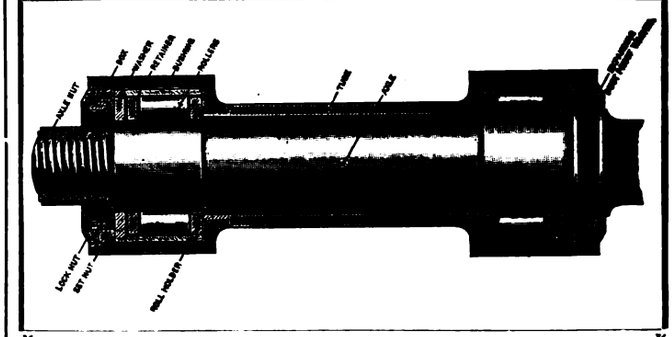
Weston-Mott Co.

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STRENGTH DURABILITY and SIMPLICITY

are distinctive features of the.....

MORSE ROLLER BEARING AXLE.



The Morse Roller Bearing Fifth Wheel will interest you, too.

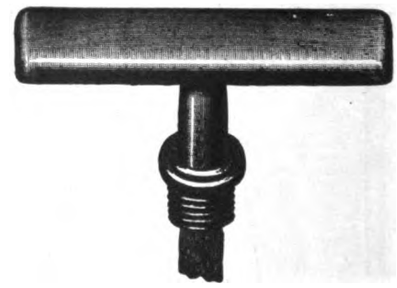
Write for circulars and price list.

THE BANTAM MFG. CO

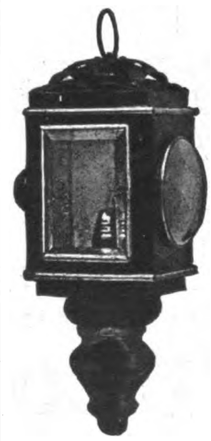
BANTAM, CONN.

WHITE MFG. CO.

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THE BEST ONLY.



LAMPS,
HANDLES,
BANDS,
POLE CRABS
MOULDINGS,
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Morocco Covered Trimmings.



Warranted not to go out. For Runabouts, etc.

Hearse Lamps.
Hearse Mountings.

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Helps Secure Situations.

Carriage, Harness and Accessory Traveling Salesmen's Association

OF THE UNITED STATES.

All Commercial Travelers in Above Lines Eligible. No Others. Pays Death Benefits.

Membership Fee, - -	$3.00
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Employers of Traveling Men eligible to join as associate members on payment of $5.00, and are exempt from all further dues.

Manufacturers of carriages, harness or goods that enter into thier construction, jobbers of same, can secure good, reliable and efficient salesmen through our Association, as the members of this Association have the best facilities for knowing all about men who are seeking situations, and none will be recommended unless they are first class and worthy of support.

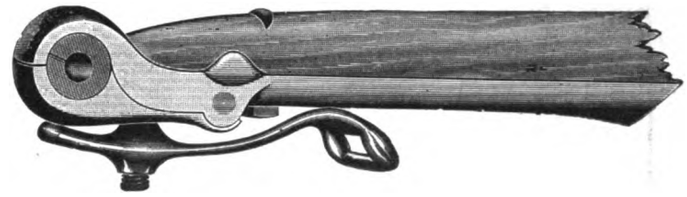
Salesmen in need of a situation, or manufacturers in need of a salesman, address for further information,

P. D. RANDALL, Secretary.

Board of Trade, Springfield, Mass.

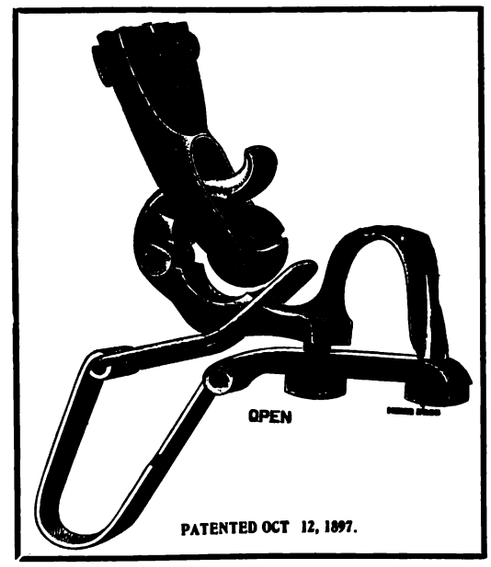
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Ball Bearing Shaft Coupling.

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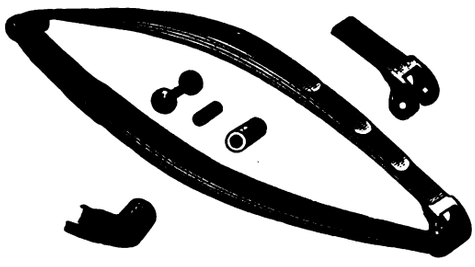
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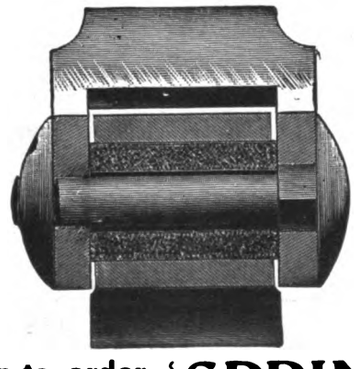
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Elliptic and Coach Platform Springs

WITH RUBBER OPEN-HEADS.

LARGE SIZE.—Designed for Broughams, Landaus and Coaches.
SMALL SIZE.—Designed for Buggies and Light Carriages.





The Rubber Open-Head SPRINGS

Work Freely Without Friction.

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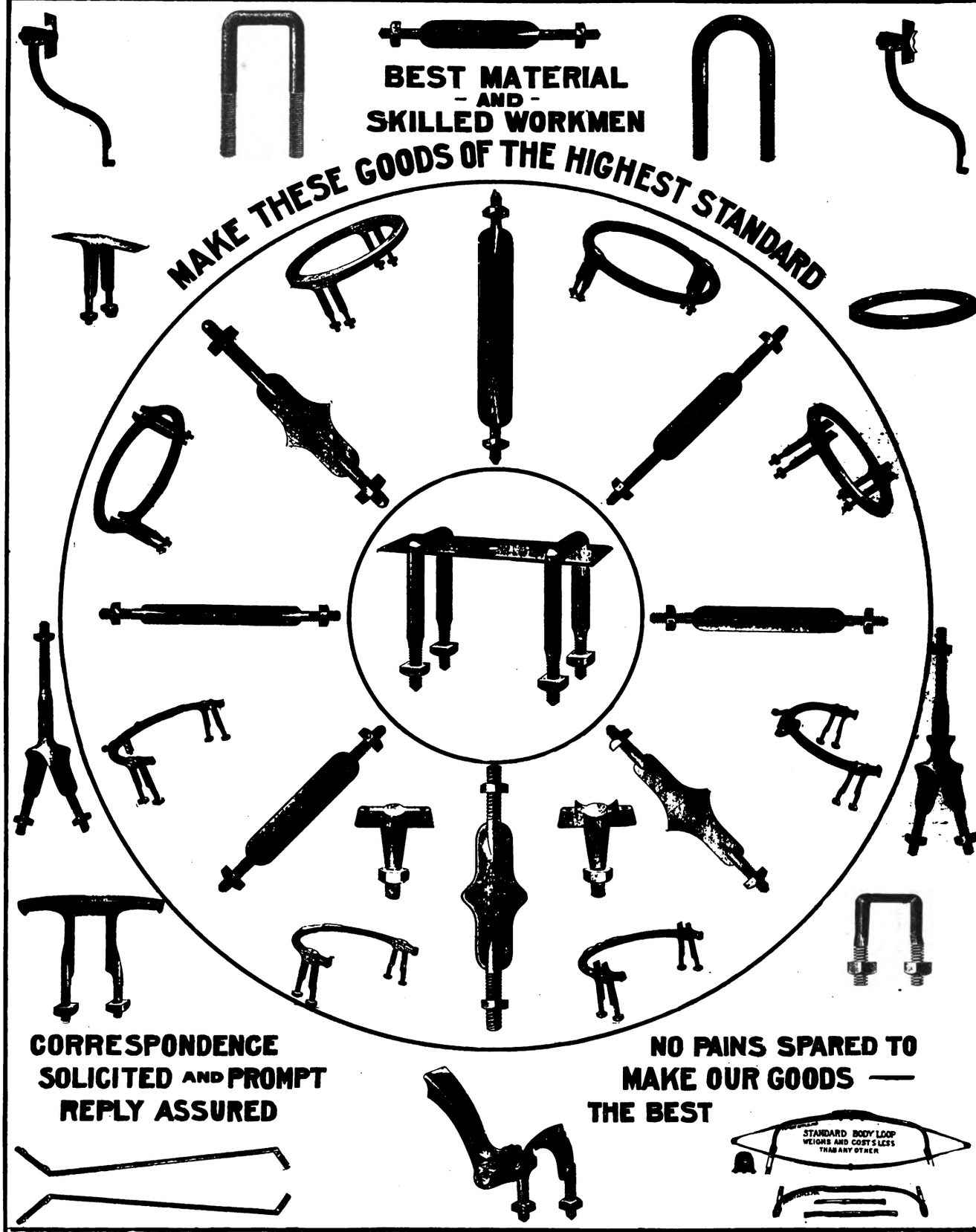
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THAT TAKES THE OUTFIT







THE BRADLEY SHAFT COUPLING

The Bradley Shaft Coupling

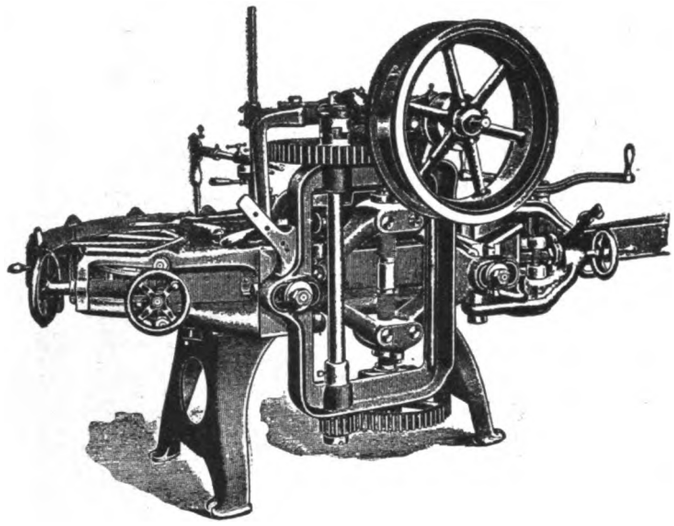
is an "open and shut" proposition--you can't lose. Fitted to your stock of vehicles, it is a clinching, sale-making argument. We can prove it.

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HAND AND POWER MACHINES

TO SUPPLY THE DEMANDS OF THE CARRIAGE AND WHEEL TRADE, AND ALSO THE BLACKSMITH AND GENERAL REPAIRER.

A power machine with an automatic attachment, and where the operator has absolute control of the machine; can stop or start it instantly at any point in its operation.

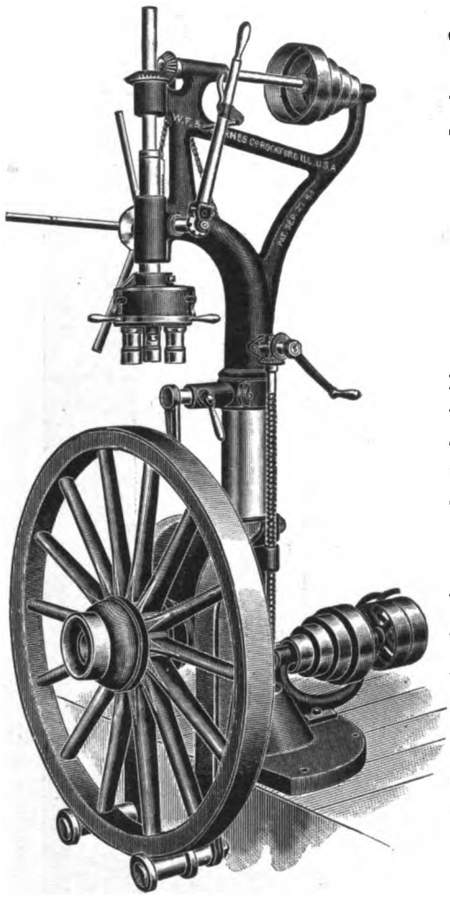
Simple in construction. Powerful in operation. Reasonable in price. Does its work thoroughly, accurately and rapidly, giving proper and uniform dish to wheels.

THE NEW MODEL McGOVERN COLD TIRE SETTING MACHINE

with its increased capacity, simplicity and strength, all three points being more than tripled in this new machine, we guarantee to set Tires ranging from ¼ inch to 2½ inch x ⅜ inch. Our daily capacity from 800 to 1,000 wheels.

We shall be at the Pan Ameriean Exposition in Buffalo. Our machine will be in operation at the factory of the Buffalo Spring & Gear Co., three minutes walk from the grounds.

The Tire Setting Machine Co.,
LIME ROCK, CONN.



A New

Tire Drill

Most rapid working tool on the market for this class of work.

Capacity:

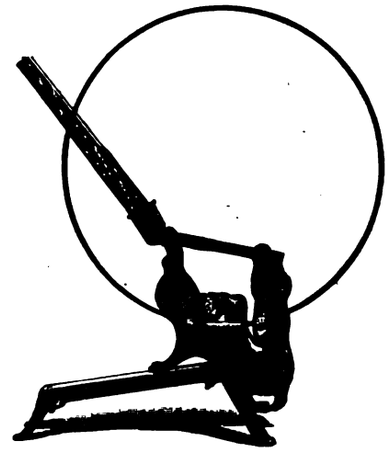
Any wheel up to 56 in. diam.
Any width of tire up to 6 in, wide.
Any hub up to 10 in. diam.

Better get some details of this Drill.

Send for Catalogue.

W. F. & JNO. BARNES CO., Established 1872.
588 Ruby Street, - - ROCKFORD, ILL.

THE IDEAL TIRE UPSETTER.



The advantages of the Ideal are:

The tire cannot kink.
One man can operate it.
One movement does the work.
It will shrink light Buggy tire.
It will shrink Heavy Wagon tire.
It will shrink Truck tire.
It will shrink perfectly all kinds and thicknesses of tire.
It is the easiest handled.
It is the most durable.
It is the latest and best.

Send for Circular and Price.

Manufactured only by

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CLIMAX WELDING COMPOUND.

It Welds Steel Tires, Axles and Springs as Easily as Iron.

HARDWARE DEALERS SELL IT.

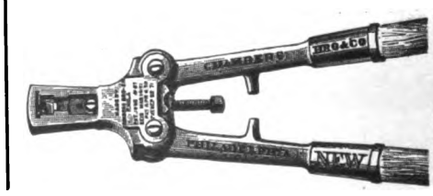
SAMPLES SENT ON RECEIPT OF 10c. IN STAMPS.

CORTLAND WELDING COMPOUND CO.,
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SMALL CUTS FOR ADVERTISEMENTS.



We carry a special line of new cuts of up-to-date vehicles, and will send you sample proofs if you will let us know what you want. Price 75c., postage paid
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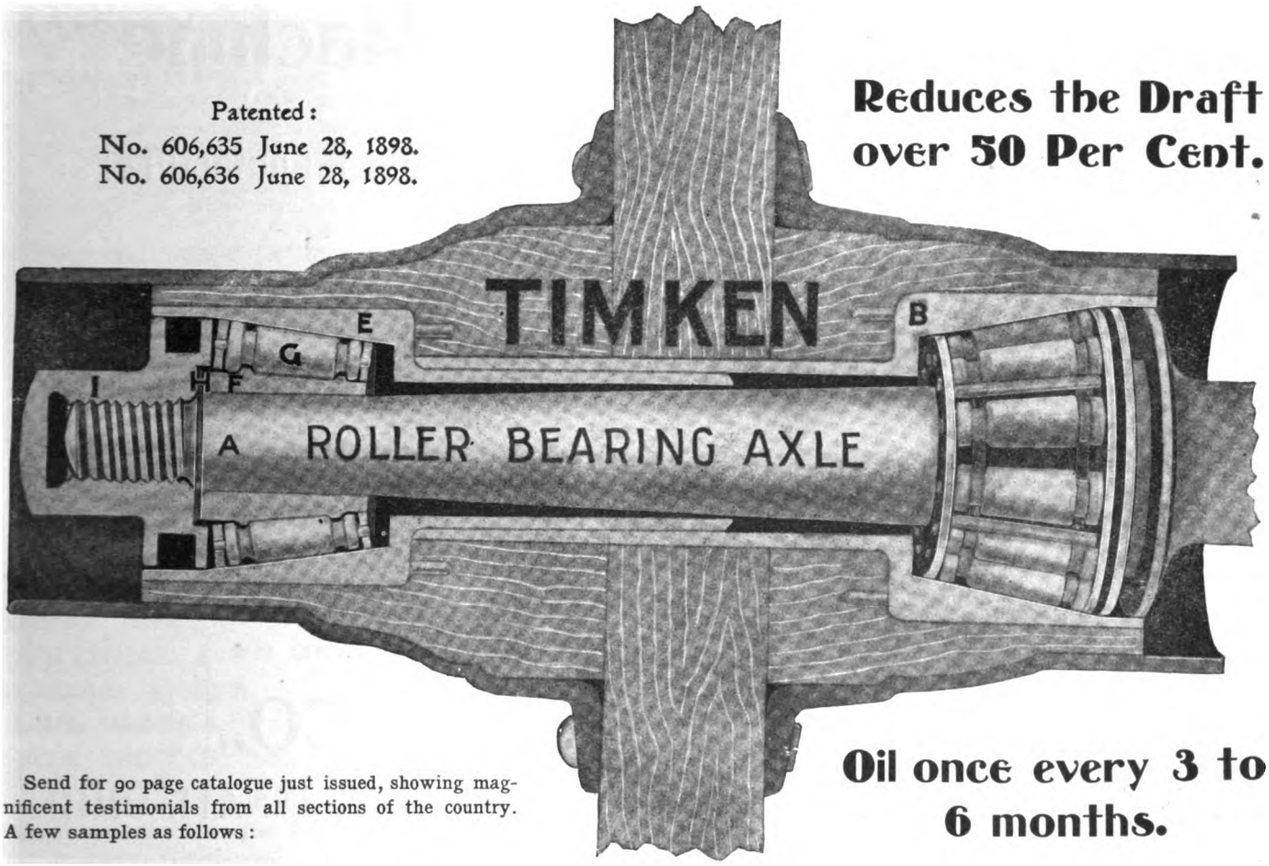
BOLT AND RIVET CLIPPERS

Chambers Brothers Co.
82d Street, below Lancaster Avenue,
Philadelphia, Pa.

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Patented:
No. 606,635 June 28, 1898.
No. 606,636 June 28, 1898.

Reduces the Draft over 50 Per Cent.



Oil once every 3 to 6 months.

Send for 90 page catalogue just issued, showing magnificent testimonials from all sections of the country. A few samples as follows:

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TIMKEN ROLLER BEARING AXLE CO.,
St. Louis, Mo.

GENTLEMEN—We consider the Timken Roller Bearing Axle the finest vehicle axle on the market to-day. Those we have used are giving the best of satisfaction. The writer has had one for his own use for a year, during which time it has been looked at but twice, and it really did not need oiling then. It is absolutely noiseless and its easy running qualities are astonishing. We do not hesitate to recommend it in the very highest terms, and as above stated, consider it the peer of any axle manufactured.

THE COLUMBIA CARRIAGE CO.,
By J. E. WRIGHT, V. Pres. & Mgr.

BOSTON, April 18, 1901.

TIMKEN ROLLER BEARING AXLE CO.,
3100 N. Second St., St. Louis, Mo.

GENTLEMEN—I have tried your Roller Bearing Axles on my private brougham and find them very satisfactory. I should recommend them to all who wish an improvement on their carriage

Yours respectfully,
CHARLES KENNY.

CONNERSVILLE, IND., April 25, 1901.

TIMKEN ROLLER BEARING AXLE CO.,
St. Louis, Mo.

GENTLEMEN—During the past year we have furnished quite a number of vehicles with Timken Roller Bearing Axles and our customers seem to be delighted with them.

Mr. Bower, the President of this Company, has been using a surrey equipped with these axles for about one year, and is highly pleased with them.

We consider the Timken Roller Bearing the simplest and most practical anti-friction axle made and take pleasure in recommending it.

Very truly yours,
CONNERSVILLE BUGGY CO.,
By SCOTT MICHENER, Secy.

PORTLAND, Me., March 30, 1901.

TIMKEN ROLLER BEARING AXLE CO.,
St. Louis, Mo.

GENTLEMEN—Since last fall we have used quite a number of sets of your Roller Bearing Axles, ranging in size from 1⅛" to 2½", with results so decidedly satisfactory as to insure our using a great many more.

We have two wagons, exactly alike, for drayage of carriages. One is equipped with your Roller Bearing Axle and is used between our factory and Portland. The teamster, who has for years been on a wagon just like it with old fashioned axles, reports a great difference. We put our lightest horse into this wagon on account of its light draught and the teamster says this horse (weighing 300 lbs. less than the large horse) will haul the same load with ease, while the big horse has to exert himself pretty hard.

We also turned out a wagon for a fruit concern, built to carry 3,000 lbs. The horse used in this wagon weighs 1,100 lbs. and the owner says he has been carrying 5,000 lbs. on this wagon ever since he had it, and shall next winter sell his other wagons and replace them with wagons equipped with Timken Roller Bearing Axles on account of the increased load he can carry.

As far as our experience and observation goes, Timken Roller Bearing Axles are a very great success.

Yours truly,
Dict. by F. O. B. F. O. BAILEY CARRIAGE CO.

TIMKEN ROLLER BEARING AXLE CO.,

ST. LOUIS, MO.

BRANCHES { NEW YORK—1769 Broadway.
BOSTON—29 Beverly Place.
CHICAGO—New York Life Building.
PHILADELPHIA—Fulton & Walker Co.

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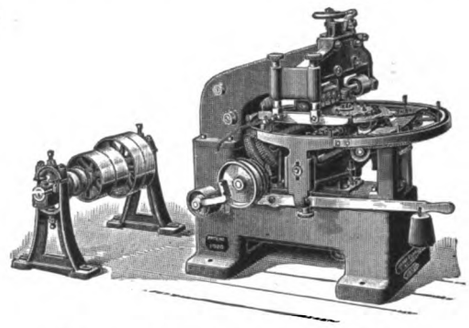
Manufacturers of Wood Working Machinery

ADAPTED ESPECIALLY FOR

Carriage, Wagon, Spoke, Wheel and Handle Manufacturers.

Grand Prix

The spoke is automatically presented to the cutter head on such an angle that a clean shear cut is made with absolute accuracy without tearing out or making culls.



No. 51. Patent Automatic Rotary Spoke Facing Machine.

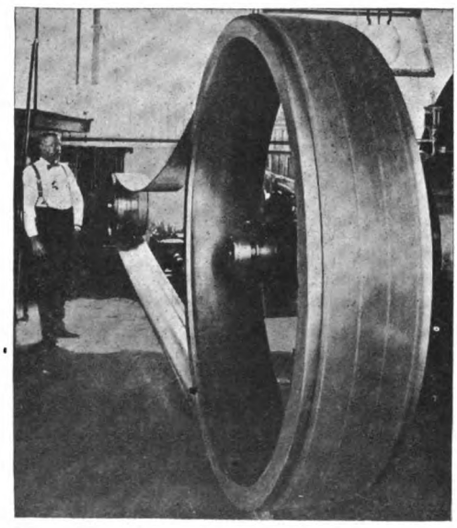
Paris 1900.

It faces more spokes with absolute accuracy than any other machine. Capacity 1800 spokes per hour.

Send for catalogue of this valuable labor saving machine.

J. A. FAY & EGAN CO.,

421-441 W. Front Street, CINCINNATI, OHIO.



CLING-SURFACE

Will permanently prevent the belts in your plant from slipping and allow them to run easy.

Your machines will be able to do more work.

You save much time now spent in taking up belts.

And Cling-Surface makes and keeps the belts pliable, elastic and in perfect condition. They are not sticky.

Order on trial to be paid for only if it proves satisfactory.

CLING-SURFACE MFG. CO.,

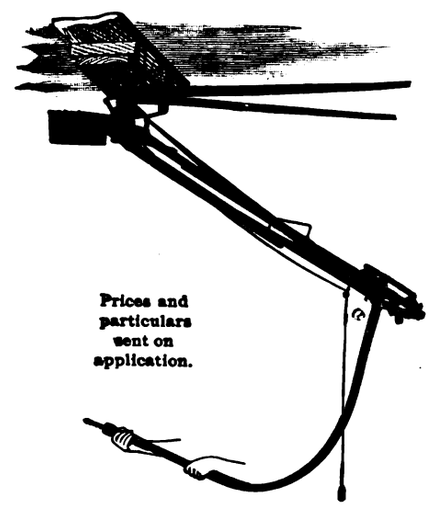
135-141 Virginia Street, - - BUFFALO, N. Y.

BRANCHES IN PRINCIPAL CITIES.

FLEXIBLE BORING... MACHINE.

Perfected.

Bores holes at any angle within a circle of twenty feet or more. **USES FLAT BELT.** Has bearings of friction pulley covered, thus overcoming every objection made to the old machine, of which there are thousands in daily use.



Prices and particulars sent on application.

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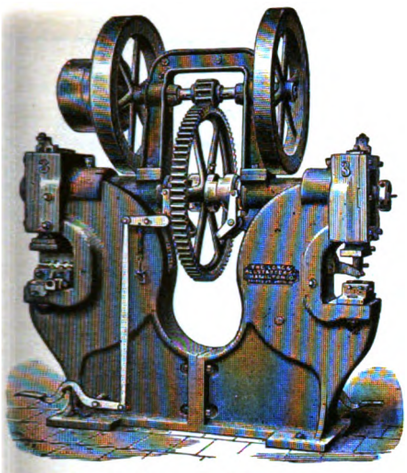
Manufacturing Co., Binghamton, N.Y.

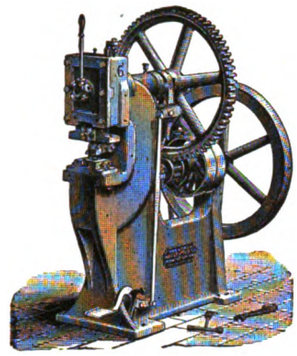
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LABOR-SAVING MACHINERY

... OF ALL KINDS FOR....

PUNCHING,
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....FOR....

Carriage Shops
Wagon Works, Etc., Etc.

DESIGNED AND MANUFACTURED BY

THE LONG & ALLSTATTER CO.

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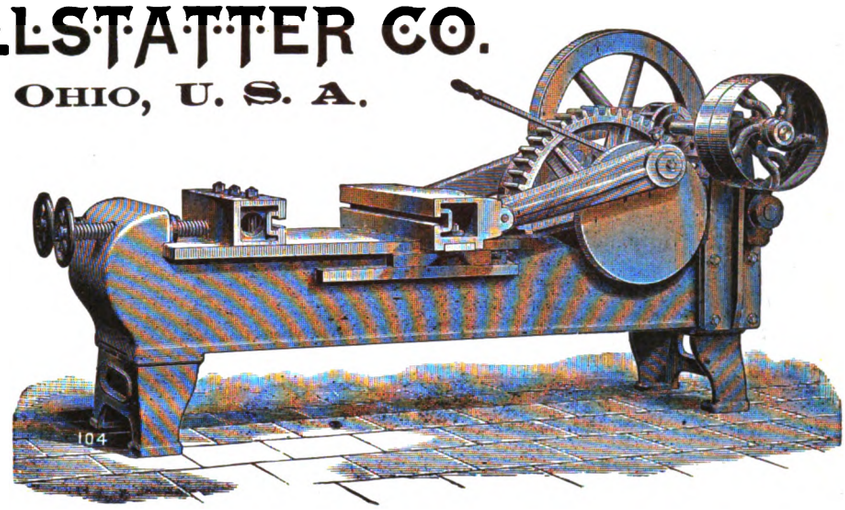
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ROLLING MILLS,
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If interested write for Catalogue.

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St. Paul Road.

(Chicago, Milwaukee & St. Paul Ry.)

ELECTRIC-LIGHTED
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All Coupon Ticket Agents sell tickets via
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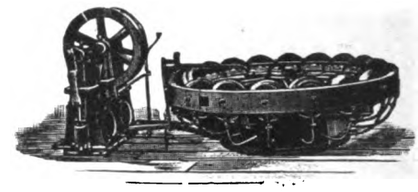
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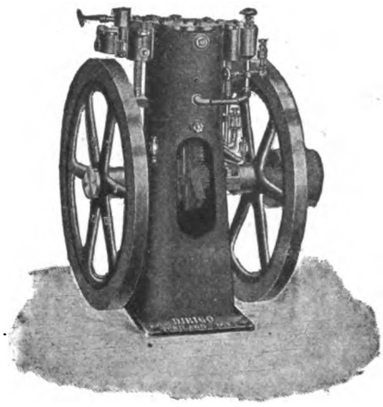
Set tires tight, and they *stay* tight. Give uniform dish to wheels, *and they hold the dish.* Compress the tire equally at all points, leaving the wheel in proper condition. Give general satisfaction to our customers.



Write for catalog with list of users and testimonials.

The West Tire Setter Co.

Rochester, N. Y.

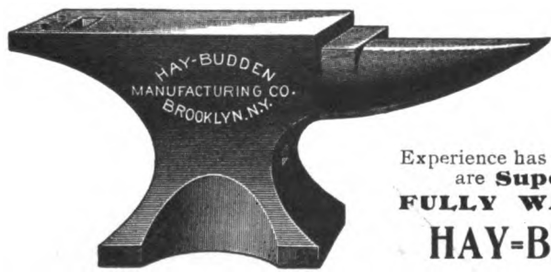


Dirigo Gasoline Engines

Are simple, durable and reliable ; they are absolutely safe ; shavings, sawdust or any kind of material, if piled all over them, would not take fire. No exposed flame on them anywhere. They require no attention; can be started in the morning and will run all day, or you can start up a thousand times a day, as it takes but a second to start them, and there is no expense when not working. For a power for the carriage, blacksmith or machine shop, or for any place where power is required, they are the most economical and most reliable. Send for full particulars. H. Dirigo Engine Works, Portland, Maine.

....FIRST MADE IN AMERICA....

"HAY-BUDDEN," SOLID WROUGHT ANVILS.



MADE OF ***Best AMERICAN Wrought Iron.***

Best AMERICAN Cast Steel.

FORGED BY ***Best AMERICAN Workmen.***

Experience has proven their worth and demonstrated that the **Hay-Budden Anvils** are **Superior** in **Quality, Form** and **Finish** to any on the market.

FULLY WARRANTED. ***SEND FOR DESCRIPTIVE CIRCULAR.***

HAY-BUDDEN MFG. CO., 254-278 NORTH HENRY STREET, BROOKLYN, N. Y.

Received Gold Medal, Highest Award for Anvils, at Omaha Exposition, 1898.

Repair Shops, Take Notice.

THE HENDERSON HAND POWER TIRE SETTER IS A MONEY-MAKER.

Worth $500 (only cost $150).



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Gentlemen: — On July 20th, 1900, I put in my shop one of your tire setters and it has proven to be the best investment I have ever made in blacksmith tools. It does the work far better than I expected and better than you represented. It's worth its price as an advertisement. It makes me more money for the amount of work and draws more trade than any tool I ever saw.

Yours,
E. L. FRANKLIN.

WRITE TO THE

STANDARD TIRE SETTER CO., KEOKUK, IOWA.

WORTH GOING TO,

120,000 square feet required for the display of finished vehicles, and accessories, harness and agricultural implements.

Over 400 different concerns.

Remember the time and place:
Cincinnati, Ohio, November 18–23, 1901.

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ESTABLISHED 1850.

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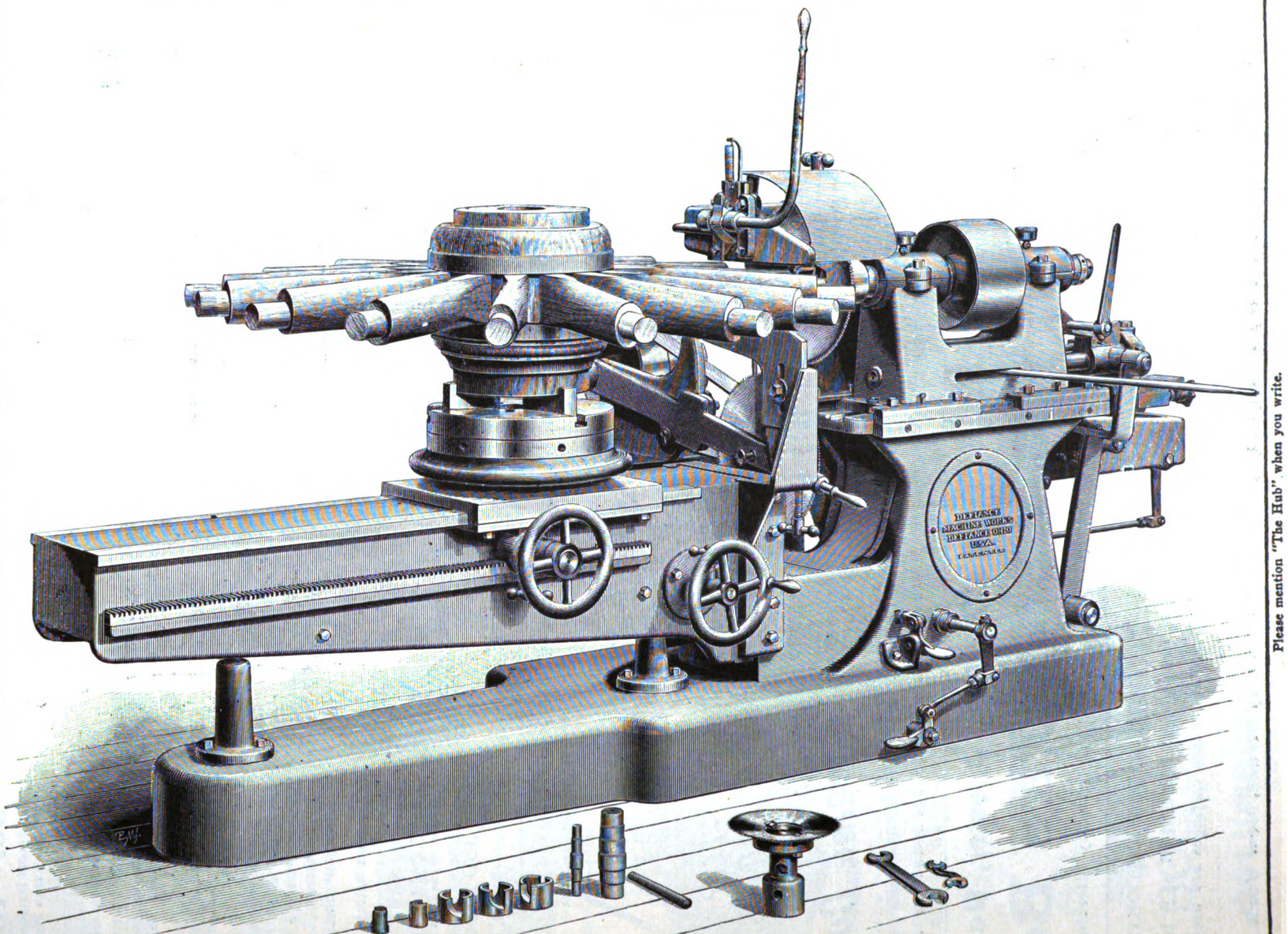
Defiance Machine Works,

DEFIANCE, OHIO.

Inventors and Builders of

Wagon and Carriage Machinery,

HUB MACHINERY,
SPOKE MACHINERY,
WHEEL MACHINERY,
RIM MACHINERY,
SHAFT MACHINERY,
POLE MACHINERY,
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AND
OVAL WOOD DISH MACHINERY.



No. 3 Patent Automatic Heavy Wheel Tenoning and Cut-Off Machine.

Export Shipping Weight, 5,500 Pounds.
Net Weight, 4,500 Pounds.

Cubic Measurement, 193 Feet.
Cable Word, TONAWANDA.

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"Silver's" New Band Saws for CARRIAGE MAKERS, WAGON MAKERS AND WOOD SHOPS OF EVERY KIND.

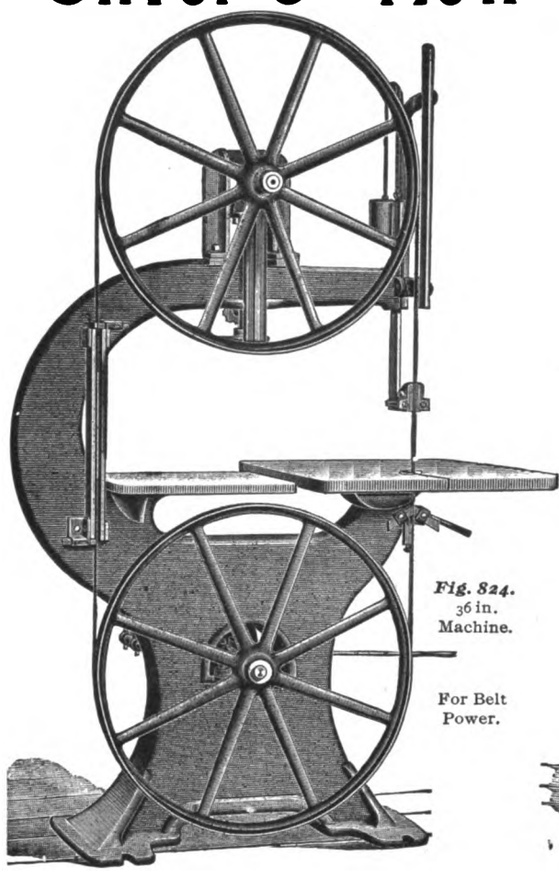


Fig. 824. 36 in. Machine. For Belt Power.

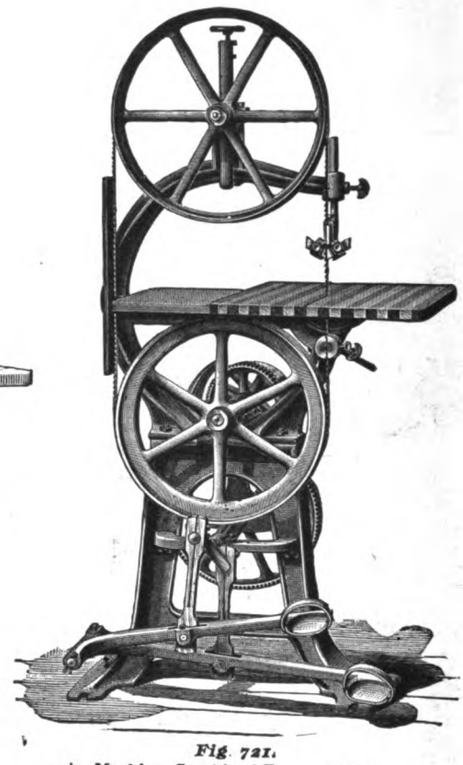


Fig. 721. 20 in. Machine. Combined Foot or Belt Power.

IN SIZES:

20 in. machine for foot or belt power.
26 in. machine for foot or belt power.
32 in. machine for belt power.
36 in. machine for belt power.

LIST PRICES,

$50.00 to $130.00.

Special Discount to Carriage and Wagon Makers.

These machines are symmetrical and modern in design, and absolutely rigid and strong for the heaviest work coming within the range of each machine.

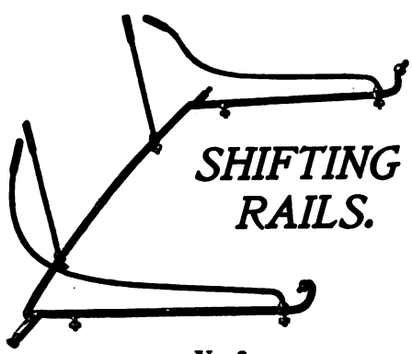
Ask for 1899 12 page Circular showing all sizes.

Manufacturers also of "DOLE'S" and "SILVER'S" HUB BORING MACHINES, "DOLE & DEMING" SPOKE TENON MACHINE, "SILVER'S" and "ADVANCE" DRILLS, Etc., Etc.

EVERY MACHINE GUARANTEED.

THE SILVER MFG. CO.

339 Broadway,
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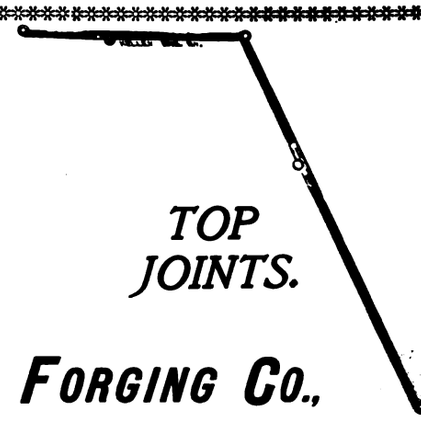


No. 3.

SHIFTING RAILS.



STEEL OR LEATHER COVERED BOW SOCKETS.



TOP JOINTS.

CORTLAND FORGING CO.,
CORTLAND, N. Y.

PORT CHESTER BOLT & NUT CO., Port Chester, New York.

"EMPIRE"
AND OTHER CELEBRATED BRANDS OF

MANUFACTURERS OF



Tire Bolts.

Our bolts will be found the most reliable of any in the market. Nuts and Bolts are perfectly interchangeable.

EXPORT TRADE!

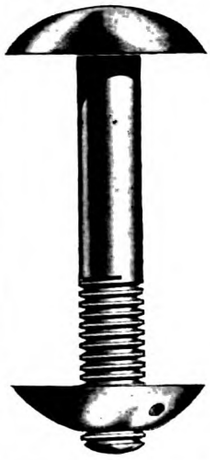
DOES IT INTEREST YOU? ARE YOU LOOKING FOR IT?

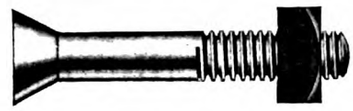
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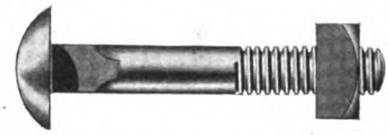


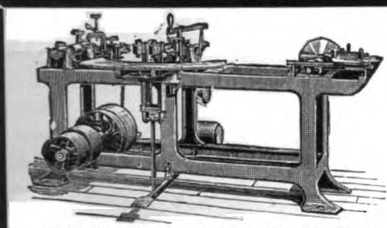
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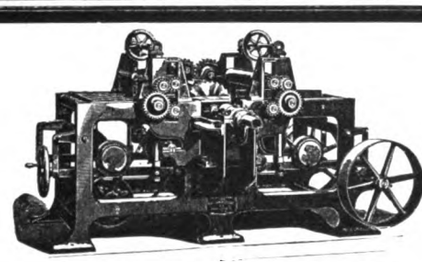
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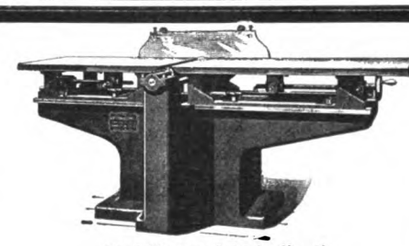




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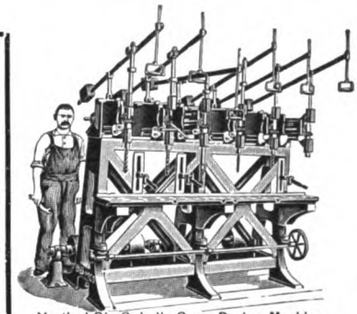
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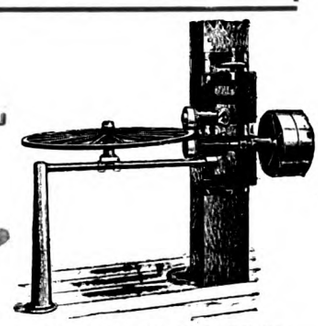
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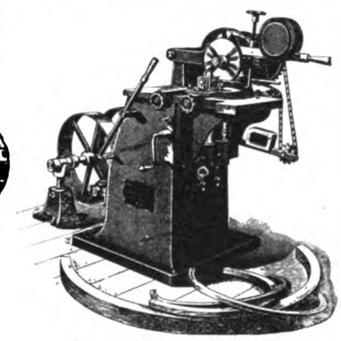
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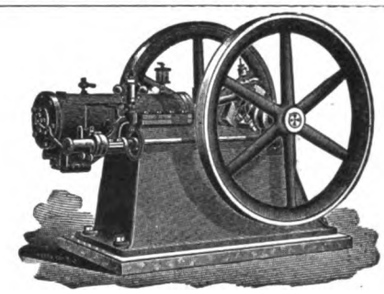
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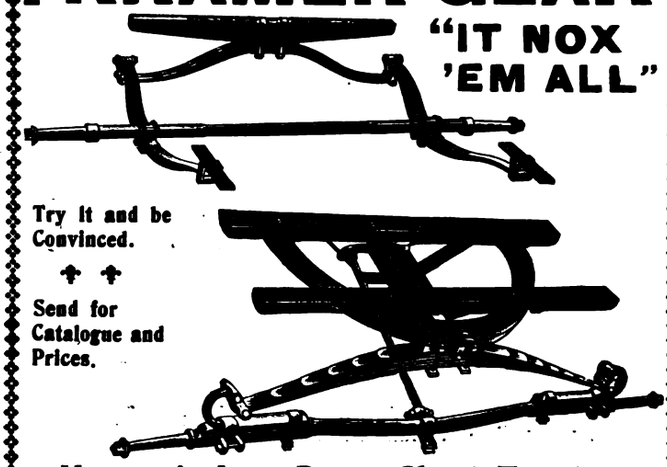


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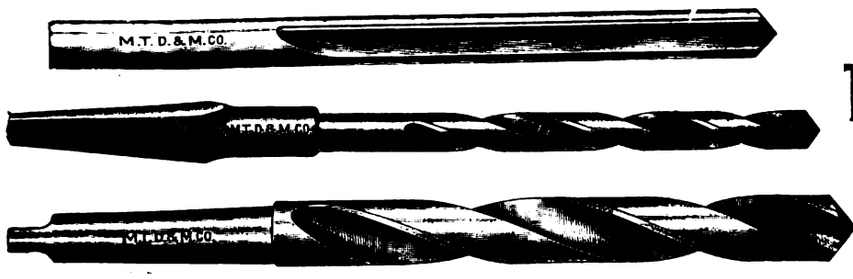
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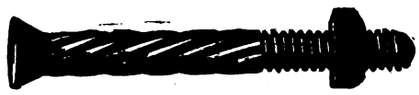
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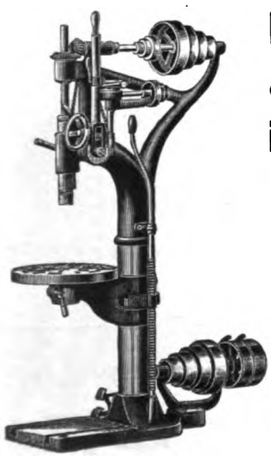
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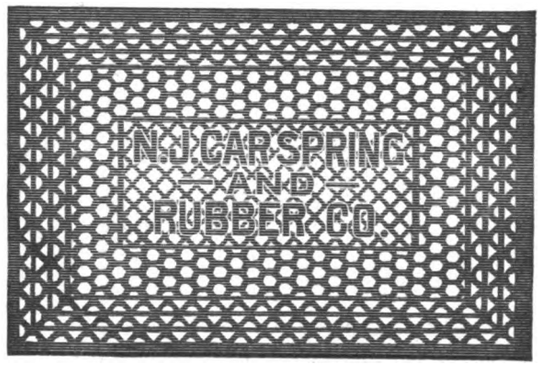
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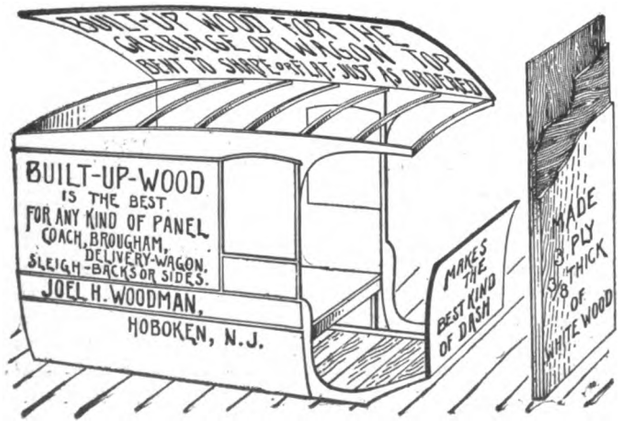
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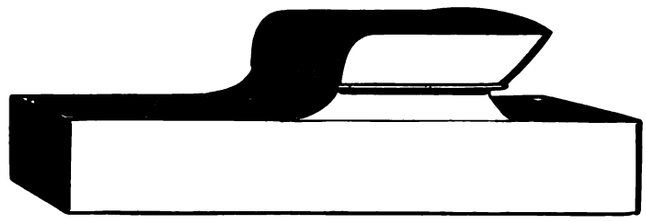
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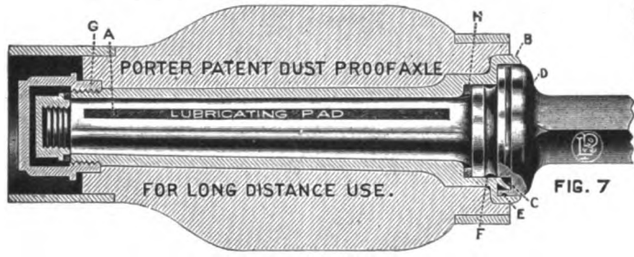
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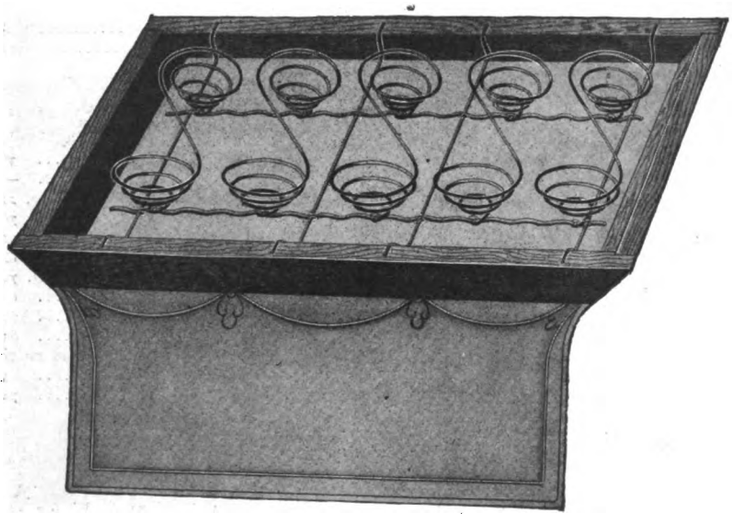
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SEPTEMBER 1901



VOL. XLIII NO. 6.

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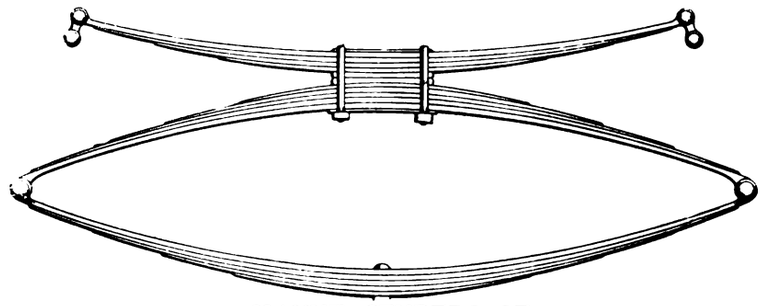
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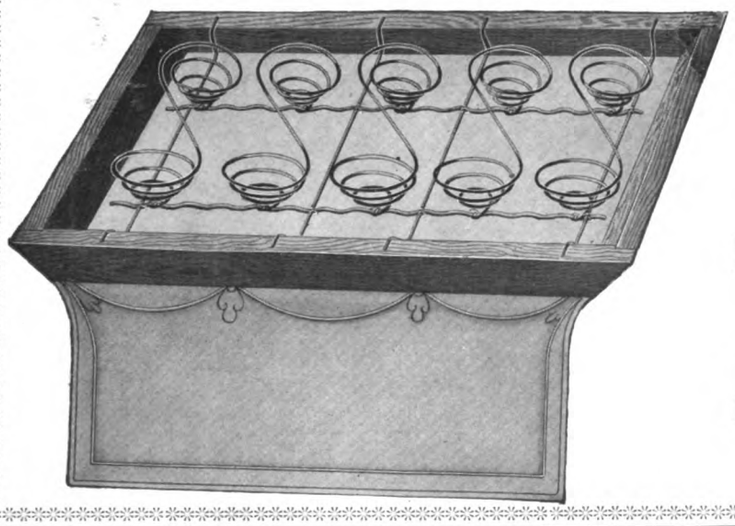
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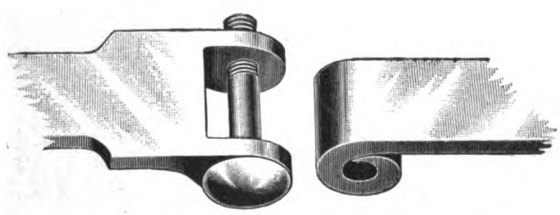
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VARNISH

Q. Is paleness of color in a varnish necessarily an evidence of good quality?

A. By no means. Water white rosin is paler than good hard varnish gum, and benzine is whiter than turpentine; but even honest varnish materials may be so manipulated, either through ignorance or carelessness, or by accident or design, that a pale varnish is produced at the expense of many much more important qualities. For instance, the gum may be under-melted, either intentionally to hold its color, or to obtain a greater yield in liquid, or merely by chance—and this gum, while utterly unfit for making a good varnish, is not only paler in itself than a properly melted gum, but it will require much more turpentine to render the resulting varnish of proper consistency, and this colorless turpentine will make the varnish paler at the expense of appearance and durability when applied, deadening its luster and making it dry out unduly porous. Again, in order to keep the varnish pale, the linseed oil may be under-boiled; that is, either with insufficient or ineffective driers, or boiled for too short a time, or at too low a temperature for the requisite quantity of drier to be permanently combined, so that in consequence it subsequently settles out.

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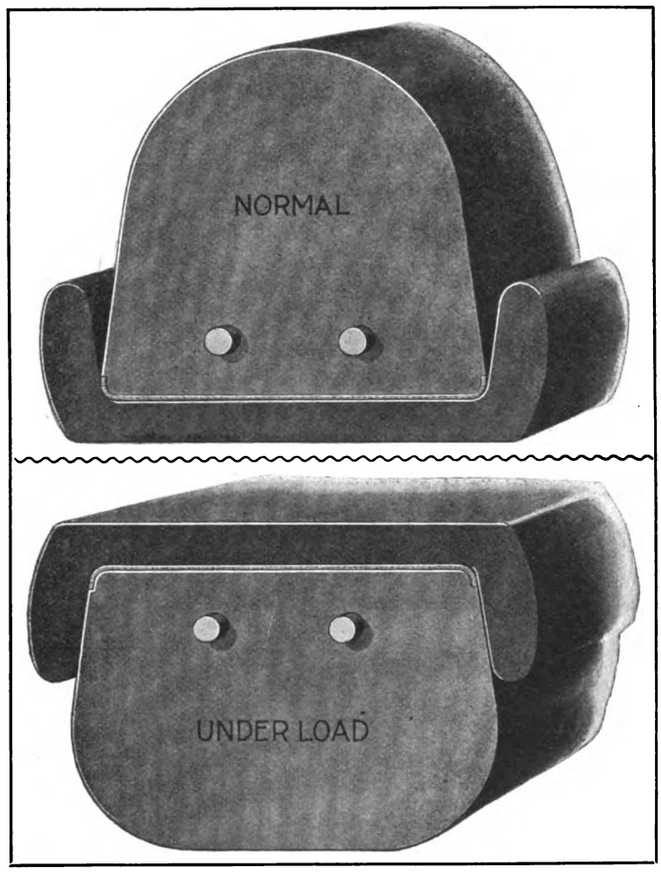
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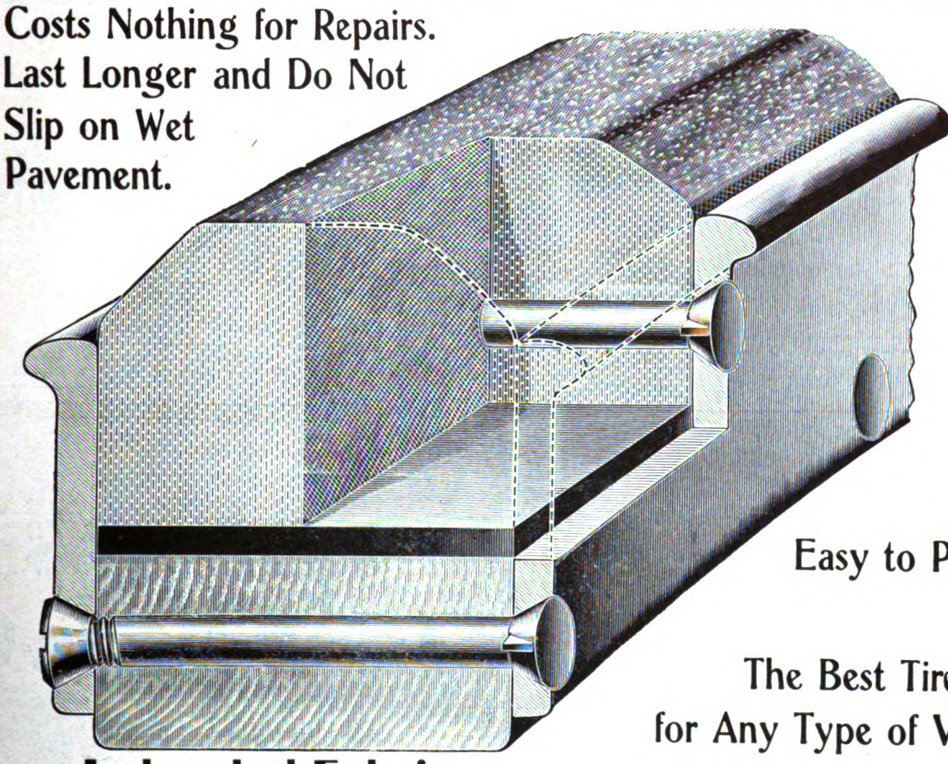
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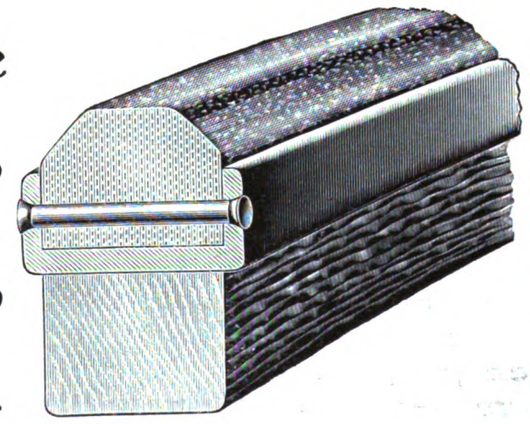
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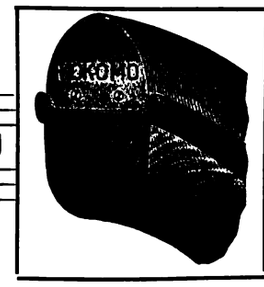
Machinery Hall, Section 47.

TRADE STANDARD TOOL CO. MARK on every STANDARD TOOL.

GOOD TIRES,

GOOD PRICES AND GOOD TREATMENT

ARE WHAT YOU



CAN GET FROM THE

Kokomo Rubber Co.

Kokomo, Indiana.

7 Arch St., Boston. 82 Broad St., New York City. 135 Lake St., Chicago. Portland, Oregon.

Don't you mind if others say
That advertising doesn't pay.
Such people surely—there's the rub—
Have never patronized THE HUB.

You are reading this ad. Why don't *you* buy this space, so others will read about *your* business?

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DIAMOND SOLID TIRES.

Advantages.

Splendid Facilities.
Scientific Compounding.
Economical Production.
Up to date Methods.

Results.

Reliable Tires.
High Grade Rubber.
Minimum Prices
Satisfied Customers.

"Won Their Way the Result of Merit."





POLICY.

Manufacturers
Business
Exclusively

D TRADE MARK D

We-Ask-
No-Favors
Beyond-a-
Comparison-of
Quality and Prices.





EXHIBITORS.

Dealers' Exposition, Grand Central Palace, New York,

Week October 14 to 19, 1901.

We cordially invite you to call at our Exhibit. Let us demonstrate the merits of Diamond Tires to you. A half hour's talk will be to your interest as well as ours.

Quick Delivery from following Points.

NEW YORK,	1717 Broadway.
CHICAGO,	429-431 Wabash Ave.
BOSTON,	234 Congress St.
PHILADELPHIA,	435 No. Broad St.
DETROIT,	310 Woodward Ave.
BUFFALO,	9 West Seneca St.

THE DIAMOND RUBBER CO.

Headquarters, Offices and Works:

AKRON, OHIO, U. S. A.

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STAN

Batavia "Star Brand" Rubber Tires

Empire Made by Ball Bearing The Chicago Screw Co. Axles

Amesbury Pneumatic Gears

Batavia Carriage and Wagon Wheels

ANTI-FRICTION

THIS COMPANY
IS OWNED, CONTROLLED
AND OPERATED BY THE
CONCERNS WHO
MANUFACTURE THE
GOODS WE SELL.

S. A-F. E. Co.

50 BROADWAY N. Y.

FACTORIES—
CHICAGO ILL.
BATAVIA N. Y.
WILKES-BARRE PA.
AMESBURY MASS.

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BARD

Beasley Truss Elastic Construction. Tires

Drop Forged Axles, Fifth Wheels, Etc.

Cushion and Pneumatic Tires

Sheldon Axles and Springs

EQUIPMENT CO.

Mr. Carriage Manufacturer:-

Our representatives, Messrs. A. C. Farnsworth, W. W. Leavenworth, A. W. Caney and J. Spofford are out after your orders. Should they not succeed in reaching you BEFORE, you will find them at the Fall conventions--New York and Cincinnati--prepared to quote you on the best line of goods money and skill can produce at prices that should secure your business.

We will take pleasure in demonstrating to you at the conventions our latest improved method of applying Rubber Tires.

Respectfully,

S A-F. E Co.

Address all communications to S.A-F.E.Co. 50 Broadway, New York.

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"WEMAKA"

PERFECT VEHICLE TIRE

Perfection in Tire Construction.

Wise Buyers
Buy Cross Wire Tires!



CROSS WIRES are to a tire what a railroad tie is to the rail---a support.

NO EXPERIMENT---one year in service has convinced the user, manufacturer, our competitors and ourselves that it is all we claim for it.

Fifty years we have been compounders and vulcanizers of Rubber, which insures the buyer that our Rubber is right, and made to withstand wear.

N. J. CAR SPRING & RUBBER CO.,

JERSEY CITY, N. J.

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The
New York Vehicle Tire
Is a long distance
Pneumatic Tire.
Use it and
Stop all worry.

New York Belting and Packing Company, Ltd.

25 Park Place, NEW YORK.

BRANCH STORES:

BOSTON: 24 Summer Street. PHILADELPHIA: 724 Chestnut Street. ST. LOUIS: 411 North 3d Street.
CHICAGO: 150 Lake Street. INDIANAPOLIS: 229 South Meriden Street.
BALTIMORE: 101 Hopkins Place. SAN FRANCISCO: 509 Market Stree t

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LEADING CANADIAN MANUFACTURERS
IN THE
CARRIAGE TRADE



Every Carriage Manufacturer in the Dominion should Subscribe to the

HUB

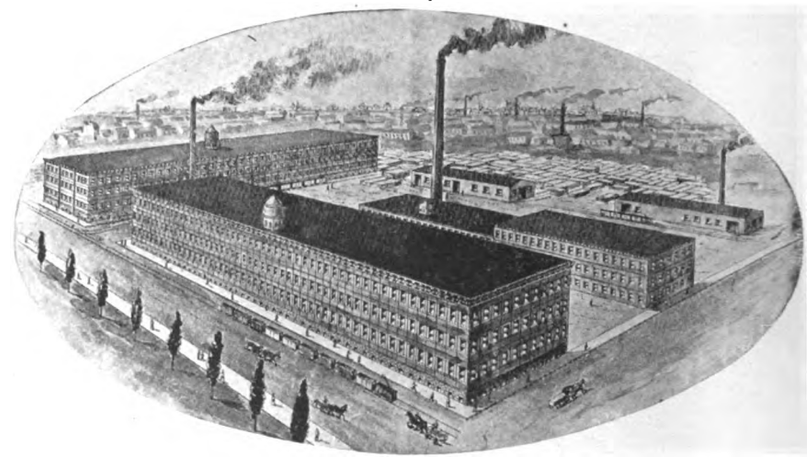
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McLaughlin Carriages are Good Carriages

HERE is our new factory, the largest and best equipped under the British Flag. Total floor space 151,000 square feet (this doesn't include the roof or yards). Proved annual capacity 14,000 finished vehicles.

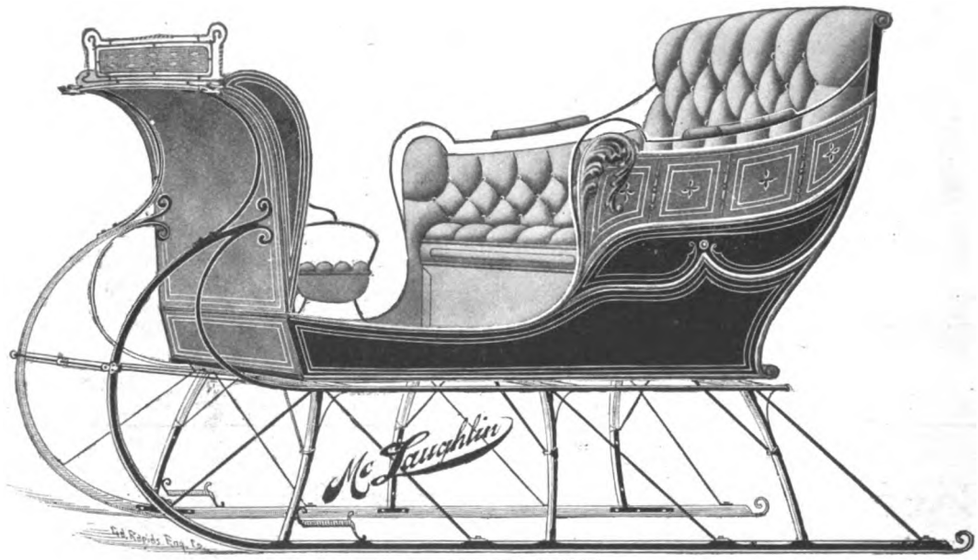
Our motto for thirty-four years has been "ONE GRADE ONLY AND THAT THE BEST."



MR. DEALER: Won't it pay you in the long run to handle "The Best" even though you pay a little more at first? Won't your customers have more good things to say for you to their friends if you sell them the best? REMEMBER—QUALITY REMAINS WHEN PRICE IS FORGOTTEN.

Cutters and Sleighs for 1901-1902

ANNOUNCEMENT—For coming season our 400 workmen are now busily engaged in making 3200 "Winter Beauties" (see cut of one of them below). We are bringing out the very newest ideas in cutters and sleighs, and have made our price list as reasonable as our motto will allow. Our cutter catalogue will be ready for distribution August 15th. Ask for one. Get our prices and order a stock of the handsomest and best cutters made in Canada. Samples at all important Fairs.



No. 221 OSHAWA SLEIGH.

SPECIAL NEW LINES

Nova Scotia Cutter No. 201.
New Brunswick Cutter No. 215.
Manitoba & Nor'West No. 216.

See them before ordering.

BRANCH HOUSES—St. John, N. B. and Winnipeg, Man.
SHIPPING POINTS—Branch Houses, London, Ont., and St. Johns, Que.

THE McLAUGHLIN CARRIAGE CO., OSHAWA, ONT.

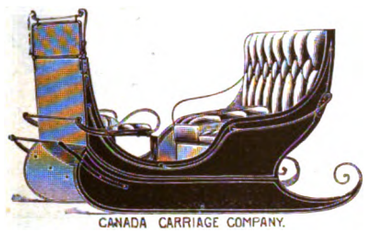
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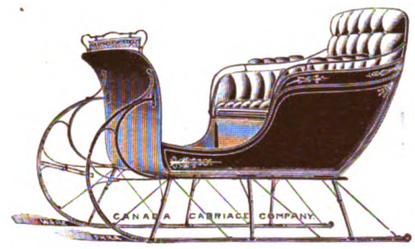
THE CANADA CARRIAGE CO.

BROCKVILLE, ONTARIO

Manufacturers for the trade of HIGH GRADE VEHICLES



CANADA CARRIOLE



OUR LADY OF THE SNOWS

BUGGIES, SURREYS, PHAETONS, TRAPS, SPRING WAGONS

ALSO A FULL LINE OF

ONE AND TWO SEATED SLEIGHS, CARRIOLES, ETC.

Send for our new sleigh hanger with portrait of the Duke of Cornwall and the Duchess using a C. C. Co. Carriole, as they all do. Catalogs, lists, etc., furnished on application to the

CANADA CARRIAGE CO., - - - Brockville, Ont.



CONBOY'S TOP With Patent Roller Curtain

IS UNEQUALLED FOR STYLE AND WORKMANSHIP.

Every Buggy sold with a Conboy Roller Top helps to sell another buggy.
Our little Prop Spring for raising and lowering Tops is superior to anything in the market.
Try a sample pair. Price 25 cents.

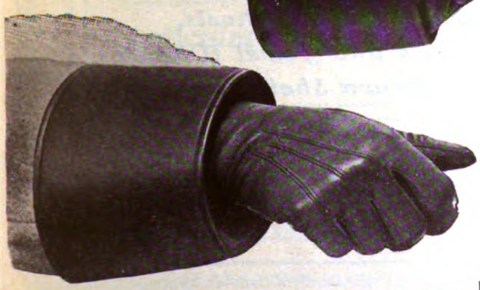
D. CONBOY,

Manufacturer of TOPS, TRIMMINGS, SEATS, BODIES, Etc.

485 King Street West, TORONTO, ONT.

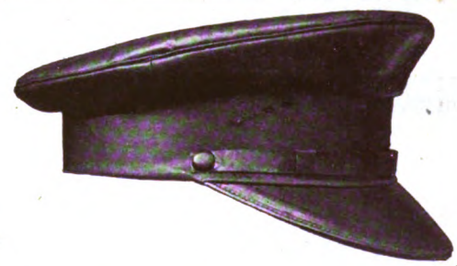
Automobile and Driving **Gauntlets**





Automobile Caps

in Leather or Cloth.



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248 West 23d Street,

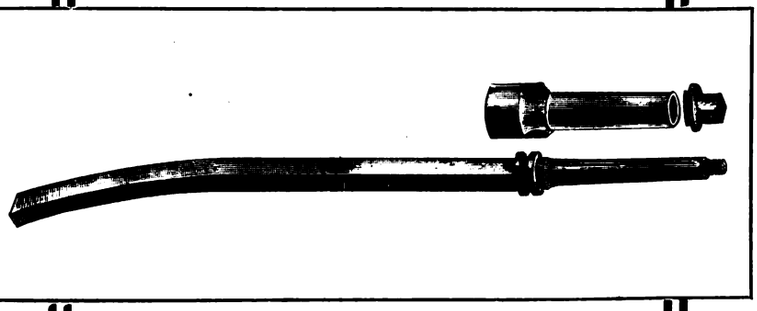
NEW YORK CITY.

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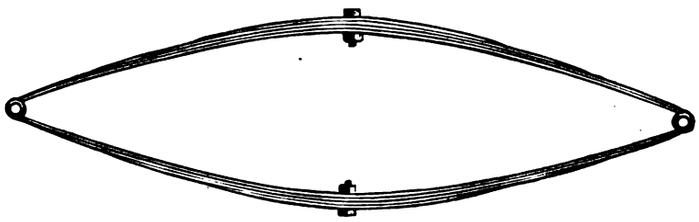
GANANOQUE SPRING & AXLE COMPANY,

Gananoque, Ontario, Canada.

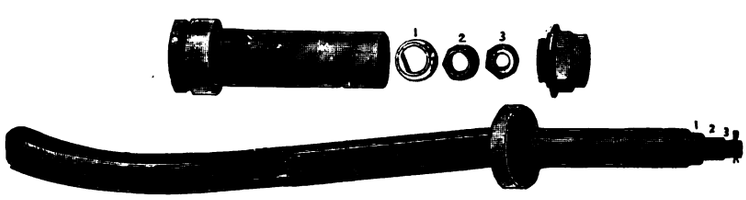


MANUFACTURERS OF

Carriage Springs.

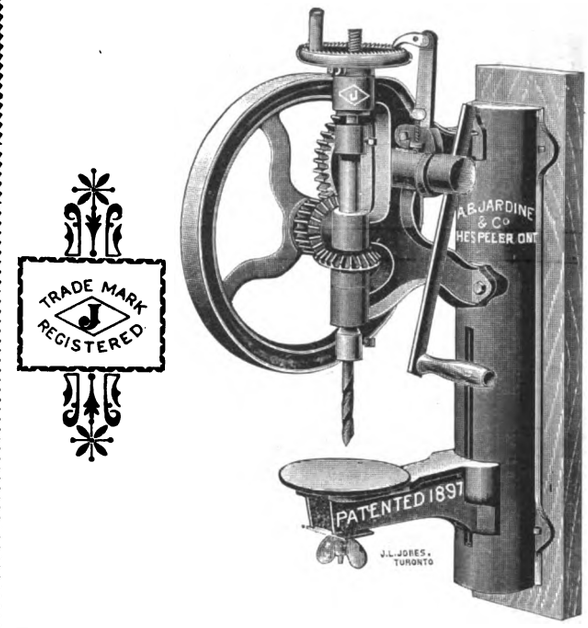


Wagon and Carriage Axles.



Wagon Skein.

100,000 Sets Per Annum.



BLACKSMITHS' MACHINES and TOOLS

A Full Line.
Ask for our Catalogue.

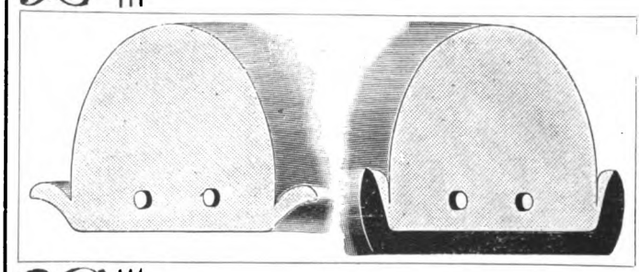
A. B. JARDINE & CO.

HESPELER, ONTARIO.

THE ONTARIO WHEEL CO'Y

LIMITED,

GANANOQUE, ONT.



Manufacturers of

Solid Rubber Tire Wheels

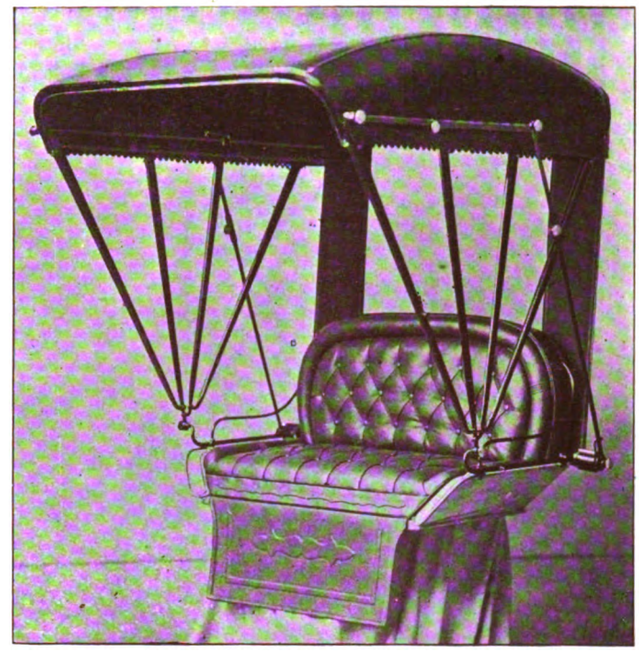
AND

Sarven Patent Wheels,
Lock and Jewel Wheels,
Brown Shell Band Wheels.

We have the exclusive control of the Goodyear Rubber Co.'s Line for Canada and use no other, as it is the best.

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Fine Feathers Make Fine Birds.



Neat, natty tops and trimmings help to sell your buggies.

Men judge of quality by external appearances; no matter how carefully you design and construct a carriage you fail to satisfy the intending purchaser unless the top and trimmings are neat and showy. They set off a buggy more than anything else about it.

If you want neat, natty work, made of the best material, we can help you sell your buggies—by furnishing you with our tops and trimmings.

Note—We use nothing but the best grade of leather and rubber. No cheap split leather or No. 2 rubber used in our factory.

Manufacturers of Tops and Trimmings, Bodies, Seats, Gears, Ironed Shafts and Poles, Gearing Woods, and dealers in all kinds of Carriage Hardware.

Buggies in the white a specialty. Cutters in the white, ironed off and trimmed.

Guelph Carriage Top & Hardware Co.

.... GUELPH, ONTARIO .....

A succession of coatings carrying the same materials in different proportions throughout, and for which we claim Economy in Time and Material, Non Poisonous Qualities, and Extreme Durability. Full particulars on application.

The Canada Paint Co., Ltd.,

MONTREAL and TORONTO.

Manufacturers of the : : : : : :

Time Saving Gear System

Manufacturers also of High Grade COLORS and VARNISHES for Carriage Painters' use. . . . .

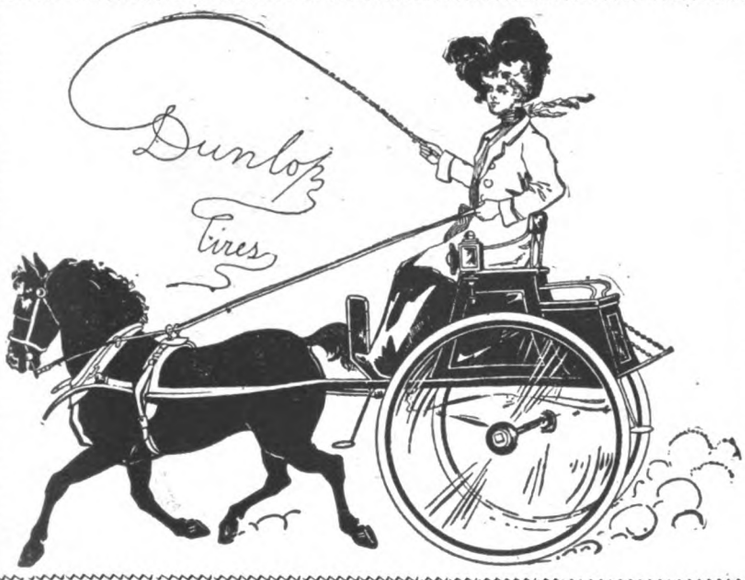
The Canada Paint Co., Ltd.,

MONTREAL and TORONTO.

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DUNLOP SOLID RUBBER VEHICLE TIRES



Are "All the Go" in Canada.

DUNLOP Carriage Tires are not confined exclusively to half-a-dozen agents and dealers, but are used by 73 Canadian carriage manufacturers, all of whom have installed special plants for the exclusive use of Dunlop Tires. Specify "Dunlop Tires" and you can sell rubber-tired carriages with half the usual talk. A new catalogue issued from press August 24th, 1901. Send for a copy to-day.

THE DUNLOP TIRE CO., Limited,

Branch Depots in Montreal, Que., St. John, N. B., Winnipeg, Man., Vancouver, B. C.

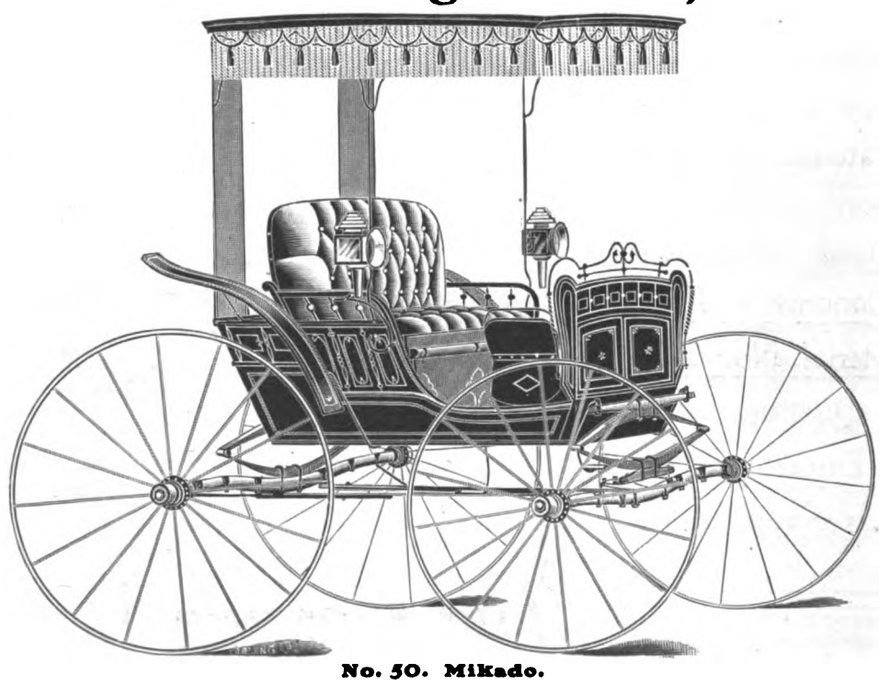
17-21 Temperance Street, TORONTO, CANADA.

MUNRO, McINTOSH & CO. ALEXANDRIA, ONT.

Wholesale Carriage Manufacturers.

We build the best

Buggies
Phaetons
Surreys
and all
Fancy Carriages
required by the trade...



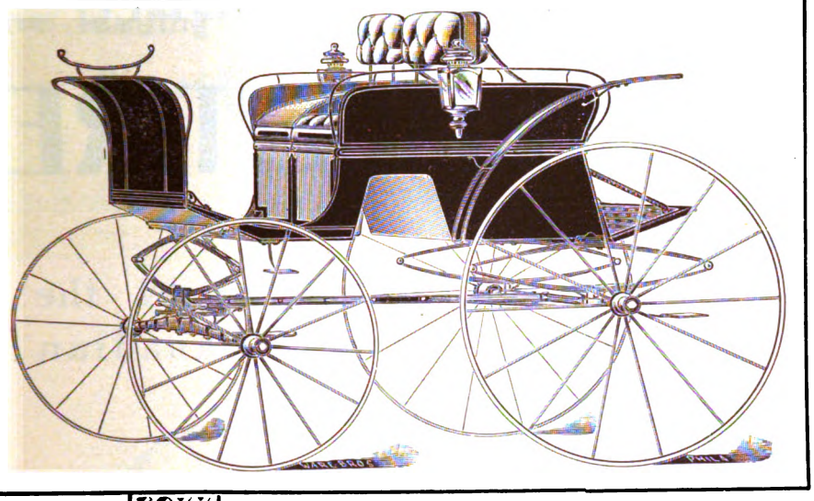
Our Carriages are known all over the Dominion as the best values to be had for the money.

No. 50. Mikado.

A sample of what we make. We will be pleased to furnish catalogue and price list to dealers.

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E. N. HENEY & COMPANY



Wholesale Manufacturers
of FINE .....

CARRIAGES,
SLEIGHS,
HARNESS,
SADDLERY,
Etc.

OFFICE AND WAREROOMS:
333-335-337 St. Paul Street,

MONTREAL,
CANADA.....

FACTORY, 758 to 788 NOTRE DAME STREET.

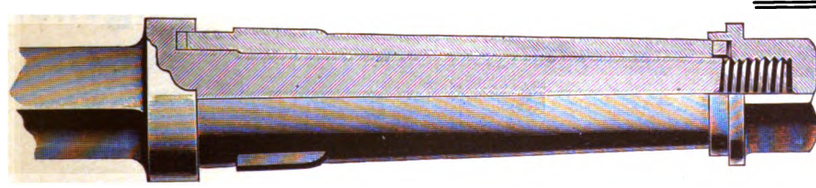
Guelph Axle Manufacturing Co.

GUELPH, ONTARIO. Limited,

MANUFACTURERS OF

The Celebrated
Anchor Brand of Axles





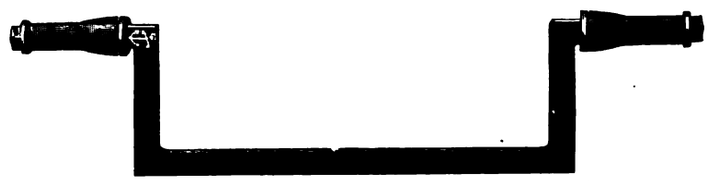
of every style and make, for Carriages, Buggies and Wagons. : : : : : : : : : : : :

COMMON TAPER, LONG BEDS, all Sizes, Solid or Loose Collars. : : : : : :

COMMON TAPER, SHORT BEDS, Solid or Loose Collars. : : : : : : : : : : : : : :

IMPROVED HALF COLLENGE, all sizes.
CRANK AXLES, all sizes.
AXLES IN PIECES.
LONG DISTANCE AXLES.

Write for Catalogue and Prices.



GUELPH AXLE MANUFACTURING CO.,
GUELPH, ONTARIO. LIMITED.

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KELLY-SPRINGFIELD

SOLID RUBBER

CARRIAGE TIRES



Are used **EXCLUSIVELY** by the following leading Canadian Manufacturers:

The J. B. Armstrong Mfg. Co., Ltd., Guelph
The Brantford Carriage Co., Ltd., Brantford
W. J. Hunter, Toronto
The McLaughlin Carriage Co., Oshawa
Munro, McIntosh & Co., Alexandria
The Palmerston Carriage Co., Ltd., Palmerston
The Tudhope Carriage Co., Orillia
The Woodburn "Sarven Wheel" Co., of Canada, Ltd., St. Catherines

AND

The Rubber Tire Wheel Co. Agencies

MONTREAL, ST. JOHN, HALIFAX,
KINGSTON, LONDON, OTTAWA.

MANUFACTURED IN CANADA SOLELY BY

The Gutta Percha & Rubber Mfg. Co.

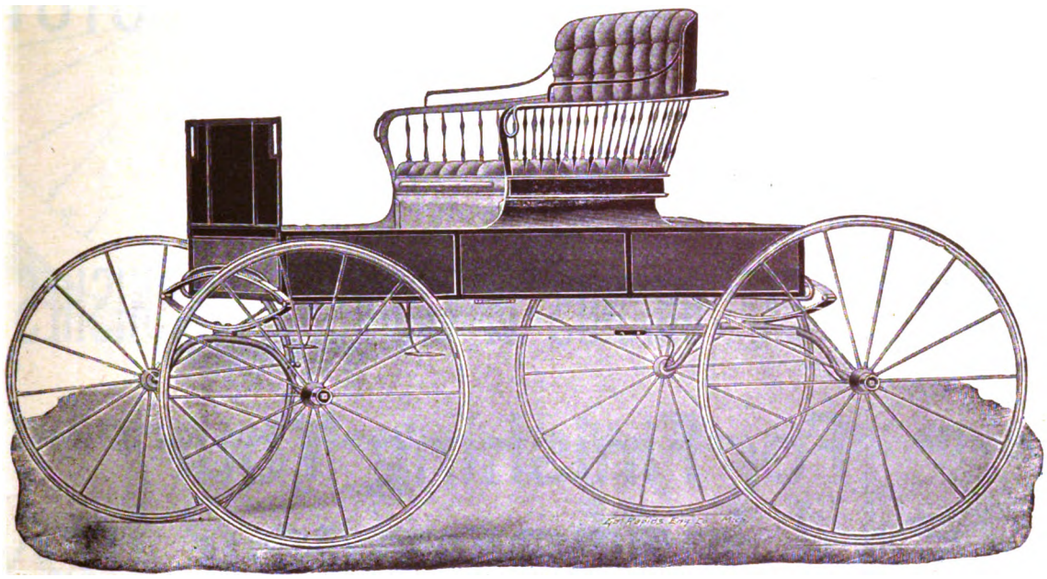
OF TORONTO, LIMITED,

45, 47 & 49 West Front Street, TORONTO, CANADA.

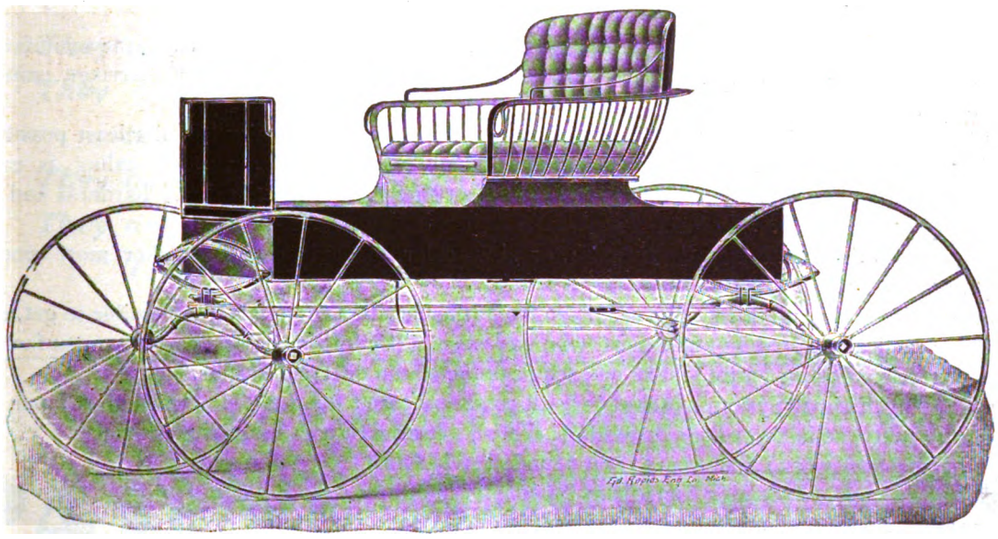
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BE UP TO DATE AND BUY

The leading line of CARRIAGES IN CANADA



No. 313—PIANO PANEL BODY



No. 113½—PLAIN BODY

COMPLETE LINE IN NEW CATALOGUE ON REQUEST

The Brantford Carriage Co. Limited

BRANTFORD, ONTARIO, CANADA

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NO MORE WORRY AND TROUBLE

Caused by Chipping, Cracking, Peeling and Flaking, if You Use

THE IMPERIAL SAVING ENAMEL SYSTEM

FOR PAINTING

AND

MAPLE LEAF BRANDS of CARRIAGE VARNISHES

For Finishing Your .. CARRIAGES ..

The Imperial Saving Enamel System is the result of long years of experience in the manufacture of the goods to produce the several brands, together with a life-long experience in practical carriage painting by all known methods.

By the Imperial System the most beautiful and durable finish is obtained at the least possible expense. The treacherous coat of color in japan, which causes so much cracking, chipping and scaling, is entirely done away with, as well as the dangerous glazing putty, and an enamel coat of remarkable hardness and elasticity is substituted.

It supersedes the unreliable color varnish, or gloss color, methods, as it is quicker, more economical and never chips, cracks, peels nor flakes.

The brands making up this system are made from the very best materials it is possible to get, and each lot (or batch) is practically tested by our expert, who has spent a lifetime in the best carriage manufactories on the continent. Directions for the entire system on each package of the different brands.

Our Saving Enamel System materials are all ready prepared for use. No treacherous japan color coats, no glazing with putty, no laborious sand papering; every coat elastic from foundation to finish.

For gears (new work) four coats from foundation to finish.

For bodies (new work) nine coats from foundation to finish.

For repair work our Saving Enamel goods have no equal. Put up in all colors.

Maple Leaf Brands of carriage varnishes are kept in tanks until THOROUGHLY RIPENED, then carefully tested by our EXPERT before canning, which insures UNIFORMITY and RELIABILITY.

Write for Descriptive ... Catalogue

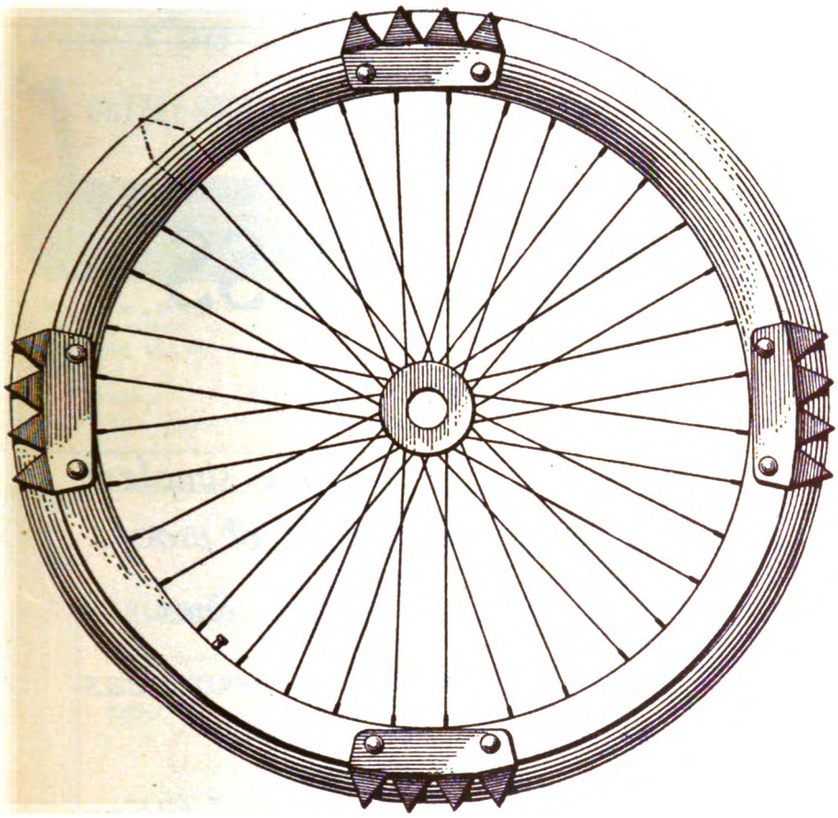
AMERICAN AGENTS ...
THE FARR MANUFACTURING CO.
BUFFALO, N. Y.

MANUFACTURED ONLY BY

THE IMPERIAL VARNISH AND COLOR CO., Limited

TORONTO, ONTARIO, CANADA

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See Those Teeth?

The Gripping Members on the Rim of the Wheel

Prevent Slipping on Mud, Ice or Snow

They are easily and quickly removed when summer comes.
They will save the price of a tire in preventing it from tearing loose.
They can run on ice on a 60 per cent. grade.
They are the ONLY device that SUCCESSFULLY SOLVES THE SLIPPING PROBLEM.

CAULFIELD'S
PATENT GRIP WHEEL
FOR AUTOMOBILES

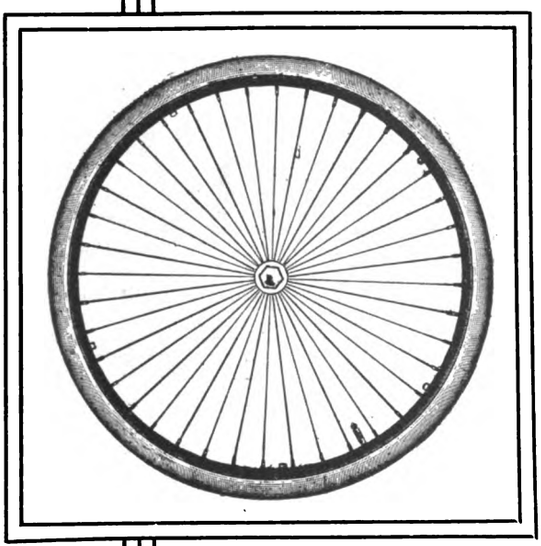
U. S. A. Patent No. 670,664 *Canadian Patent No. 71,089*

Particulars on Application to **JOHN CAULFIELD,**

74 Nelson Street **BROOKLYN, N. Y.**

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"Built for Business"



A Pneumatic Buggy with the simplest B. B. adjustment possible--it's fool proof.

A Pneumatic made on correct lines.

A Pneumatic at once full of new ideas and selling points.

A Pneumatic with a wire wheel fitting with a bronze hub.

A Pneumatic with exclusive detail and appointments.

A Pneumatic that's right, and sold direct to the trade, either in the white or finished in the very highest manner.

Make your inquiries; we will tell you what you want to know.

The Lashaway Carriage and Wheel Co.

E. F. BUNKER, Mgr.

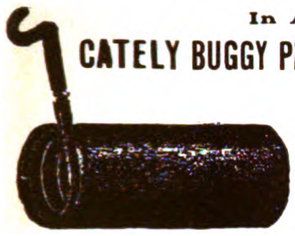
EAST BROOKFIELD, MASS.

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Will You Lead or Follow?

In Adopting the

CATELY BUGGY PROP-SPRINGS AND LEVERS.



They are rapidly becoming indispensable to a modern buggy.

125,000 pairs in use—the proof of merit.

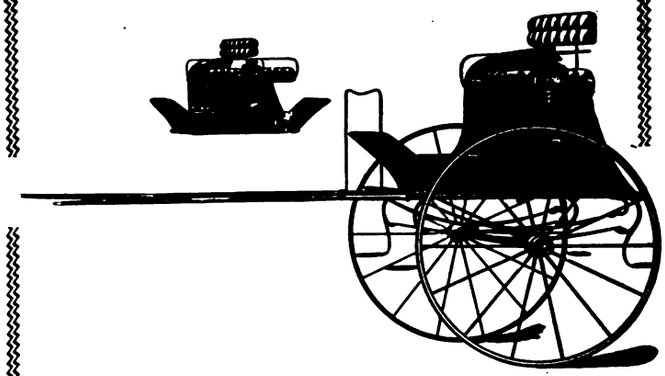
Every Manufacturer should put them on work, because they double the life of top and make it almost self-acting.

Every Dealer should insist on having them, because of their talking points. Can be attached to old or new work. Beware of infringements and inferior imitations. There is *only one* best, and it is the Cately.

Guelph Carriage Hardware Co., Guelph, Ont.

CATELY & ETTLING, CORTLAND, N. Y.

Combination Cart.



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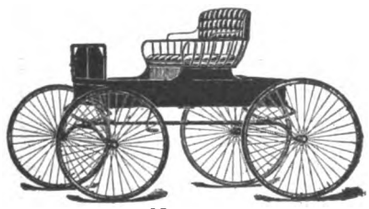
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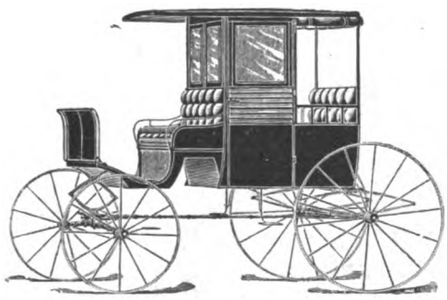
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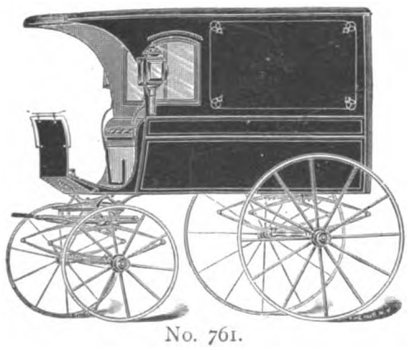
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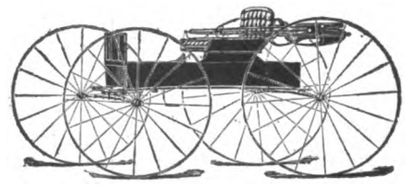
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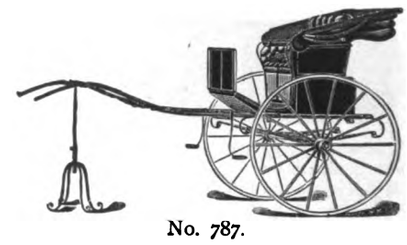
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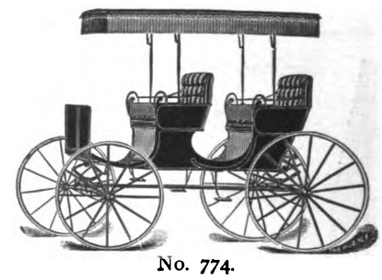
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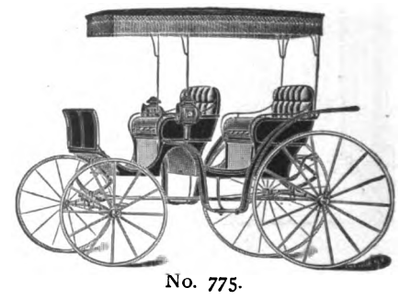
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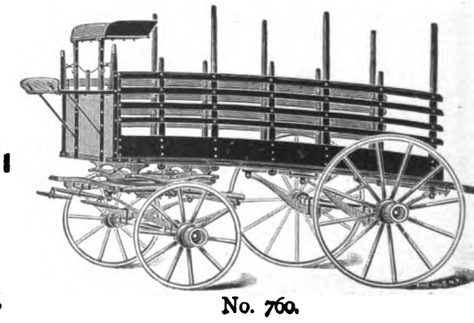
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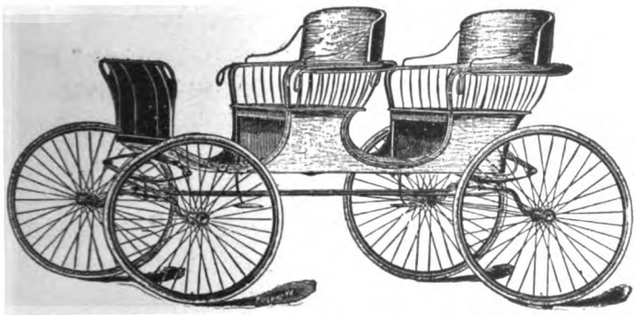
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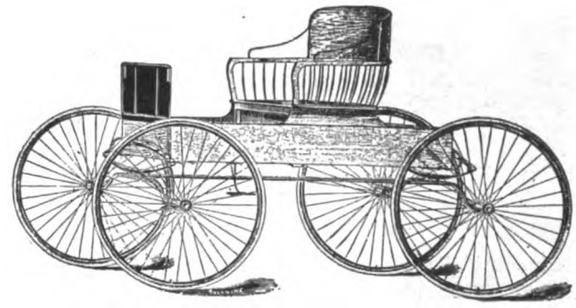
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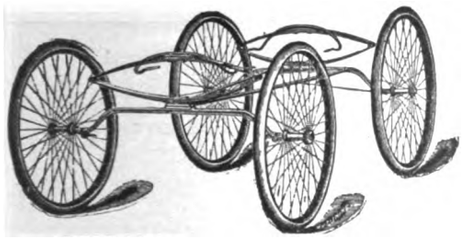
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FITCH PNEUMATIC SURREY (In-the-White).



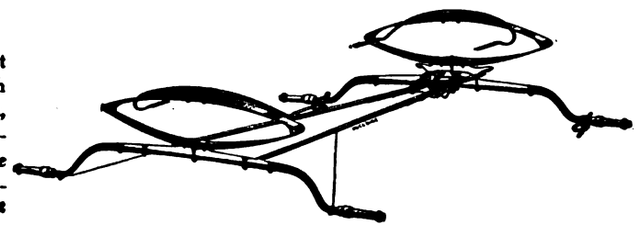
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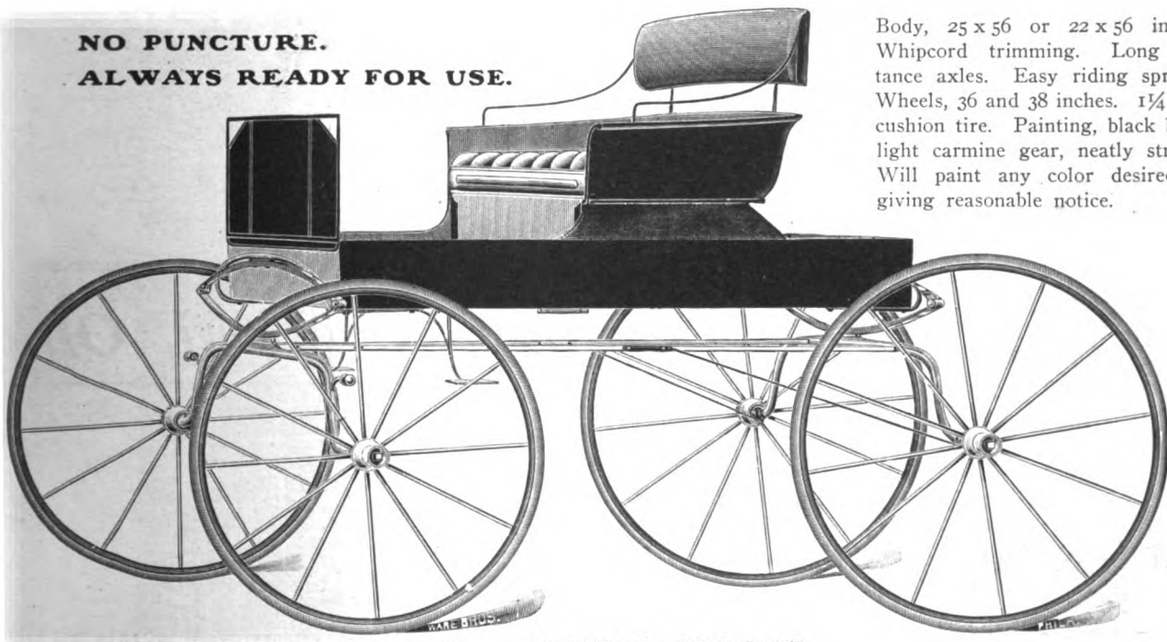
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SHOWING ALL STYLES OF PNEUMATIC AND BIKE WORK.

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THE BEST Good Material and Fine Workmanship are what we claim for every job manufactured by us.

NO PUNCTURE.
ALWAYS READY FOR USE.



Body, 25 x 56 or 22 x 56 inches. Whipcord trimming. Long distance axles. Easy riding springs. Wheels, 36 and 38 inches. 1¼ inch cushion tire. Painting, black body, light carmine gear, neatly striped. Will paint any color desired by giving reasonable notice.

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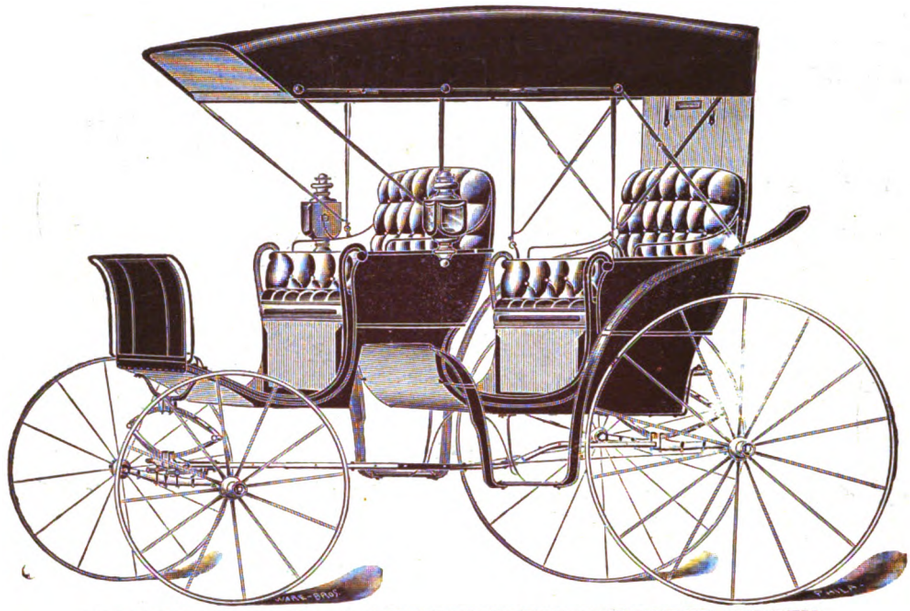
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"Youngstown" Dealers' Delight.



"YOUNGSTOWN" No. 84, EXTENSION TOP CUT-UNDER SURREY.

No. 84 "Youngstown" not only pleases every individual buyer, but its popularity has become so universal that in many sections it has been styled the "Dealers' Delight."

It is strictly high grade in every detail. Description appears on pages 6 and 7 of our catalogue.

The top is best brand hand buffed leather; leather curtains and leather covered bow sockets.

We would be pleased to quote price and send catalogue to dealers.

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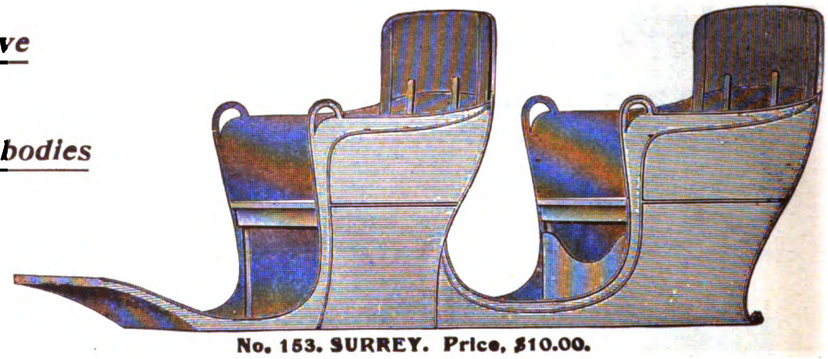
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BODIES! BODIES! BODIES!

Many new and attractive designs for 1900.

A choice lot of stylish bodies always in stock.

REQUEST WILL BRING CATALOGUE AND PRICES.



No. 153. SURREY. Price, $10.00.

CINCINNATI PANEL CO., Cincinnati, Ohio.

Don't you mind if others say
That advertising doesn't pay.
Such people surely—there's the rub—
Have never patronized THE HUB.

You are reading this ad. Why don't *you* buy this space, so others will read about *your* business?

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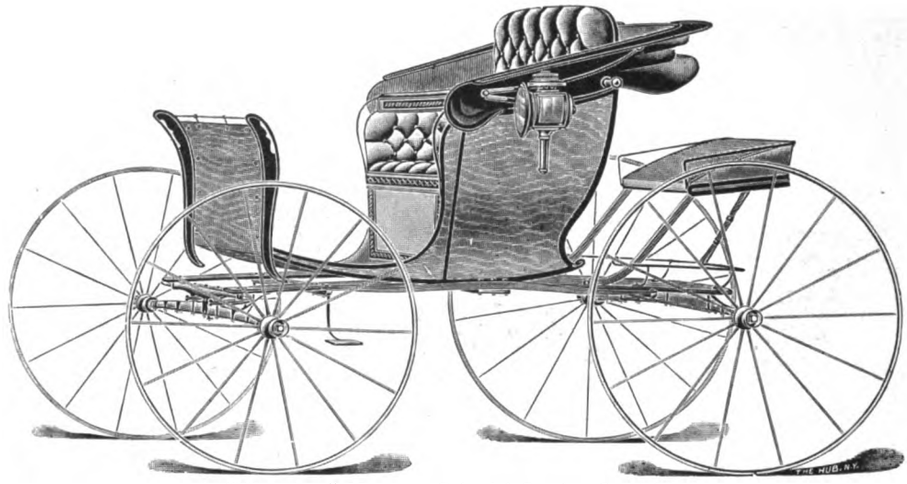


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THE SUPERIORITY IN DESIGN,

CONSTRUCTION, FINISH AND EQUIPMENT OF OUR FOUR HUNDRED SERIES BUCKBOARDS HAVE MADE THEM THE STANDARD OF COMPARISON FOR OTHER BUILDERS OF VEHICLES IN THE BUCKBOARD LINE.

THE STATEMENT, "AS GOOD AS A WATERLOO," MEANS TO THOSE WHO ARE "VEHICLE WISE," THAT HIGHER PRAISE IS IMPOSSIBLE.



"Waterloo," No. 437, Colonial Spyder Curricle.

THE CARRIAGE DEALER WHO IS CATERING TO HIGH-CLASS TRADE WILL FIND THIS LINE A DESIRABLE ADDITION TO HIS STOCK, NOT ONLY IN THE CHARACTER IT WILL GIVE, BUT IN THE PROFITS IT WILL MAKE HIM.

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EARLY APPLICATION IS ADVISED.

THIS LINE OF BUCKBOARDS IS MEETING WITH MUCH FAVOR IN MANY OF THE PAN-AMERICAN COUNTRIES, AND WE QUOTE ATTRACTIVE PRICES, CAREFULLY BOXED, ON BOARD VESSEL AT ALL EXPORT POINTS.

WATERLOO WAGON COMPANY, Ltd.

WATERLOO, SENECA CO., N. Y.,
U. S. A.

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WAGON

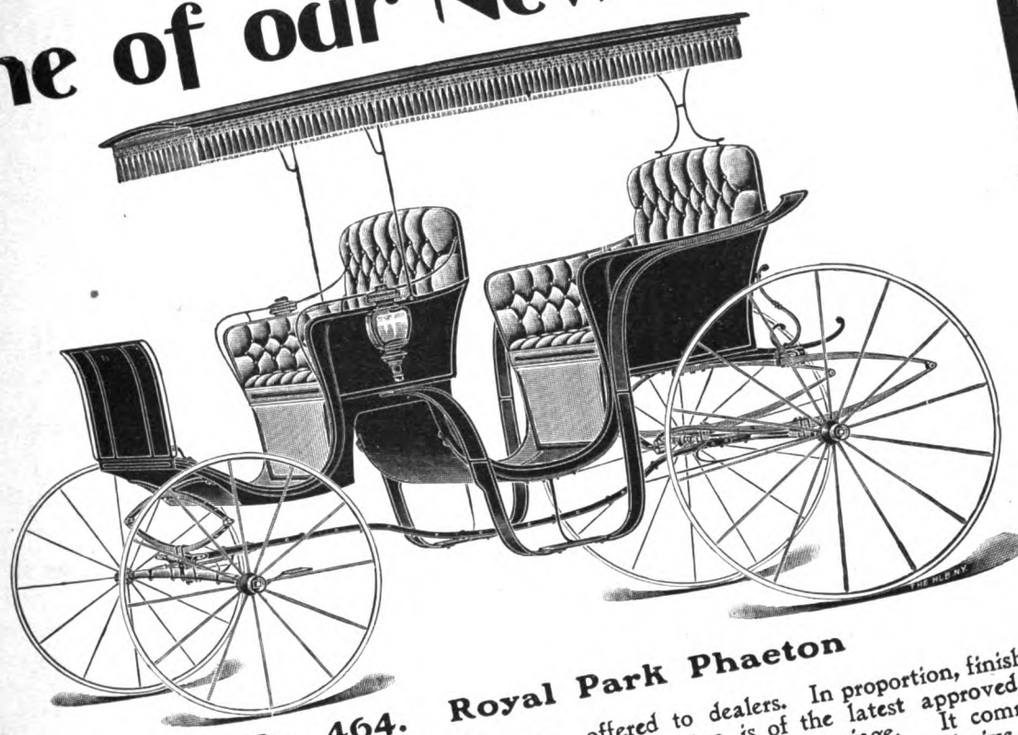
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COMPANY LTD.,

LATE STYLES

FINE FINISH

One of our New Styles



No. 464. Royal Park Phaeton

We show above one of the best values ever offered to dealers. In proportion, finish and equipment it is absolutely correct in every detail. The top is of the latest approved construction and is easily removable, making a very handsome open carriage. It commands the immediate and favorable attention of the buyer who is looking for an exclusive high-grade vehicle at the right price. *Vehicle Dealers in the Pan-American countries will receive our Special Export Price Sheet free by mentioning "The Hub" when they write.*

Unusual care is given to boxing for ocean shipment to economize space and secure safe arrival.

Prices are quoted on board vessel at export points in our price sheet.

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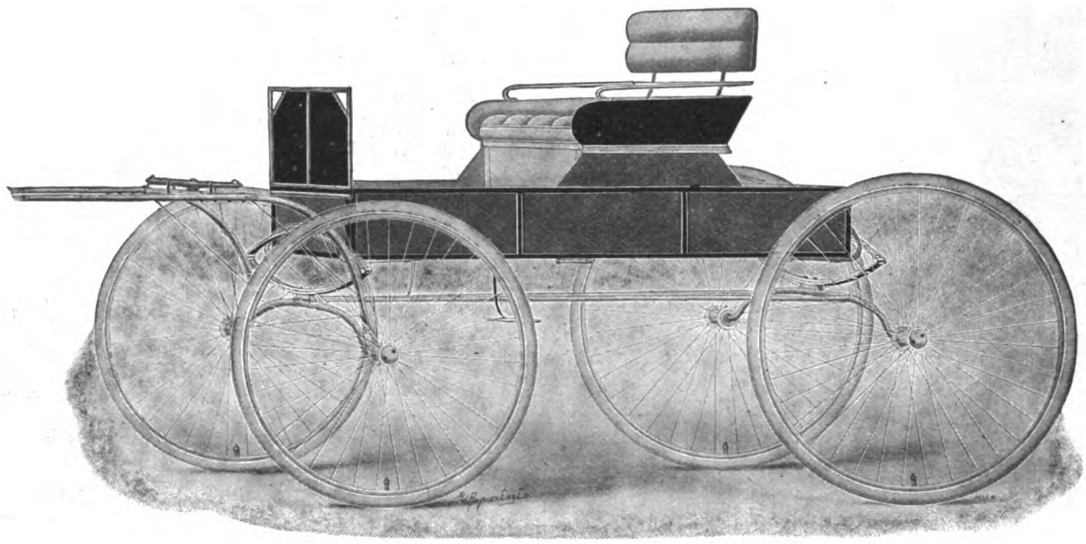
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No. 133 RUBINSTEIN.

The Latest Idea In a Pneumatic Wagon, Embracing The New Style Beverly Body and Seat.



No. 133 Rubinstein Wagon.

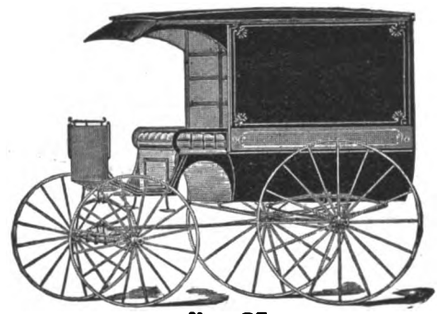
No. 133 represents the latest idea in a pneumatic wagon, embracing the new style Beverly body and seat. In the manufacture of this wagon we have given attention to the smallest details, not only in the selection of material of the very best quality, but in the rounding out and finishing; making in the end the truly finished piece of work.
This wagon is of the proper proportion and without fault or blemish.

WRITE AND GET FULL DESCRIPTION.

THE RICHLAND VEHICLE CO., Mansfield, Ohio, U. S. A.

BEST ... IN THE MARKET

THE QUALITY OF OUR WORK IS GUARANTEED



No. 35

WE BUILD HONEST

WAGONS

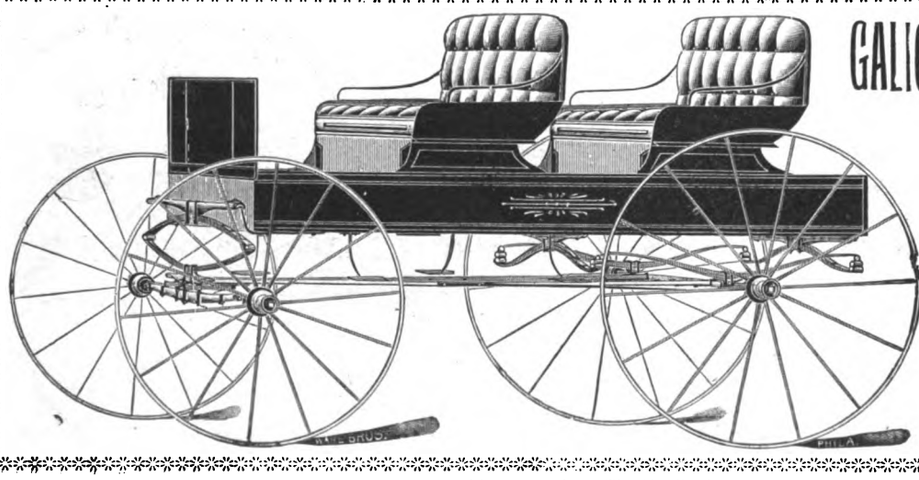
AT HONEST PRICES

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THE ...

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CINCINNATI, OHIO



GALION WAGON & GEAR CO.

GALION, O.

Most complete Wagon and Gear Factory on Earth ...

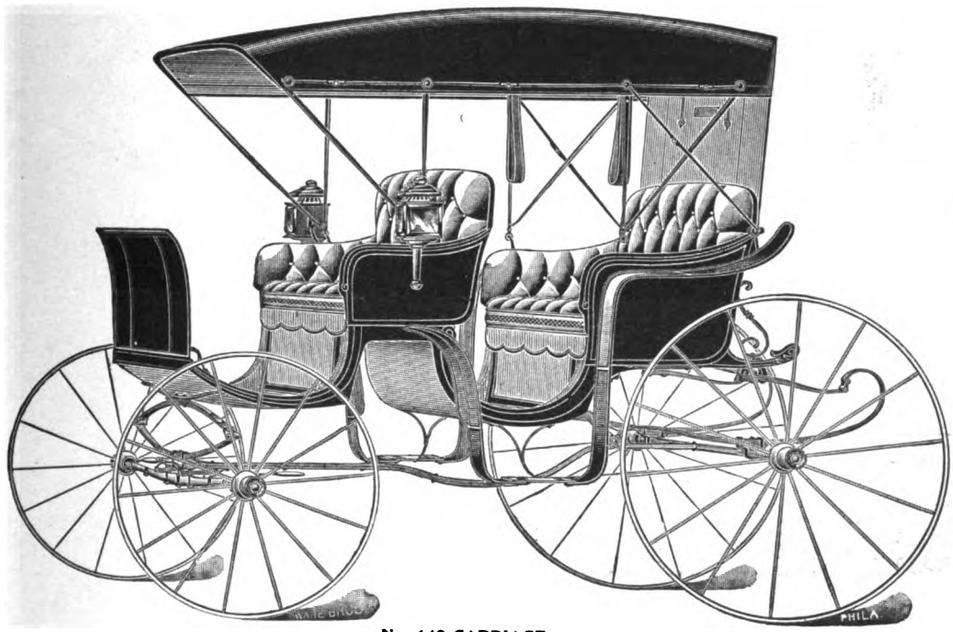
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BLEES-McVICKER CARRIAGE CO.,

Manufacturers of FINE VEHICLES.

STYLE, QUALITY, WORKMANSHIP.



No. 140 CARRIAGE.

It Will Pay You to Investigate

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MACON, MISSOURI.

THE COLUMBIA WAGON CO.

COLUMBIAN

COLUMBIA, PA. U.S.A.

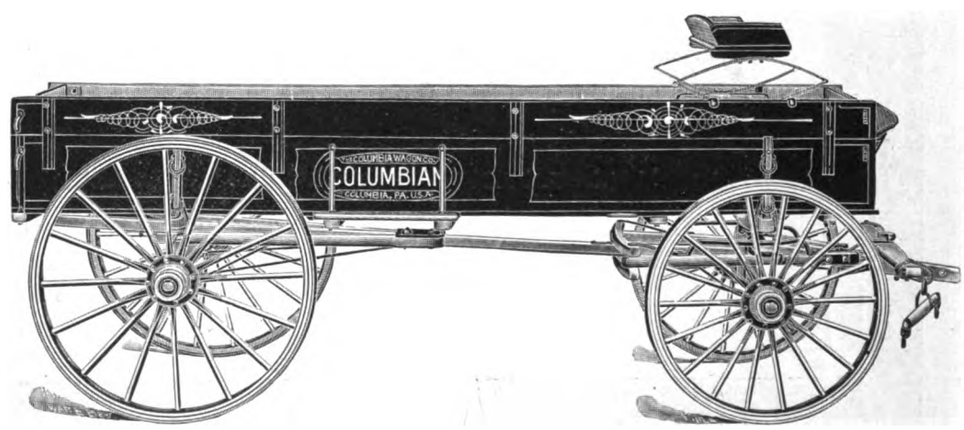
BY THIS MARK YOU WILL KNOW THEM

Meet us at the New York Exposition October 14th to 19th, 1901

Will have the largest line of Farm Wagons ever shown at the New York Exposition. Do not fail to see us. Watch for our Trade Mark, as shown above.

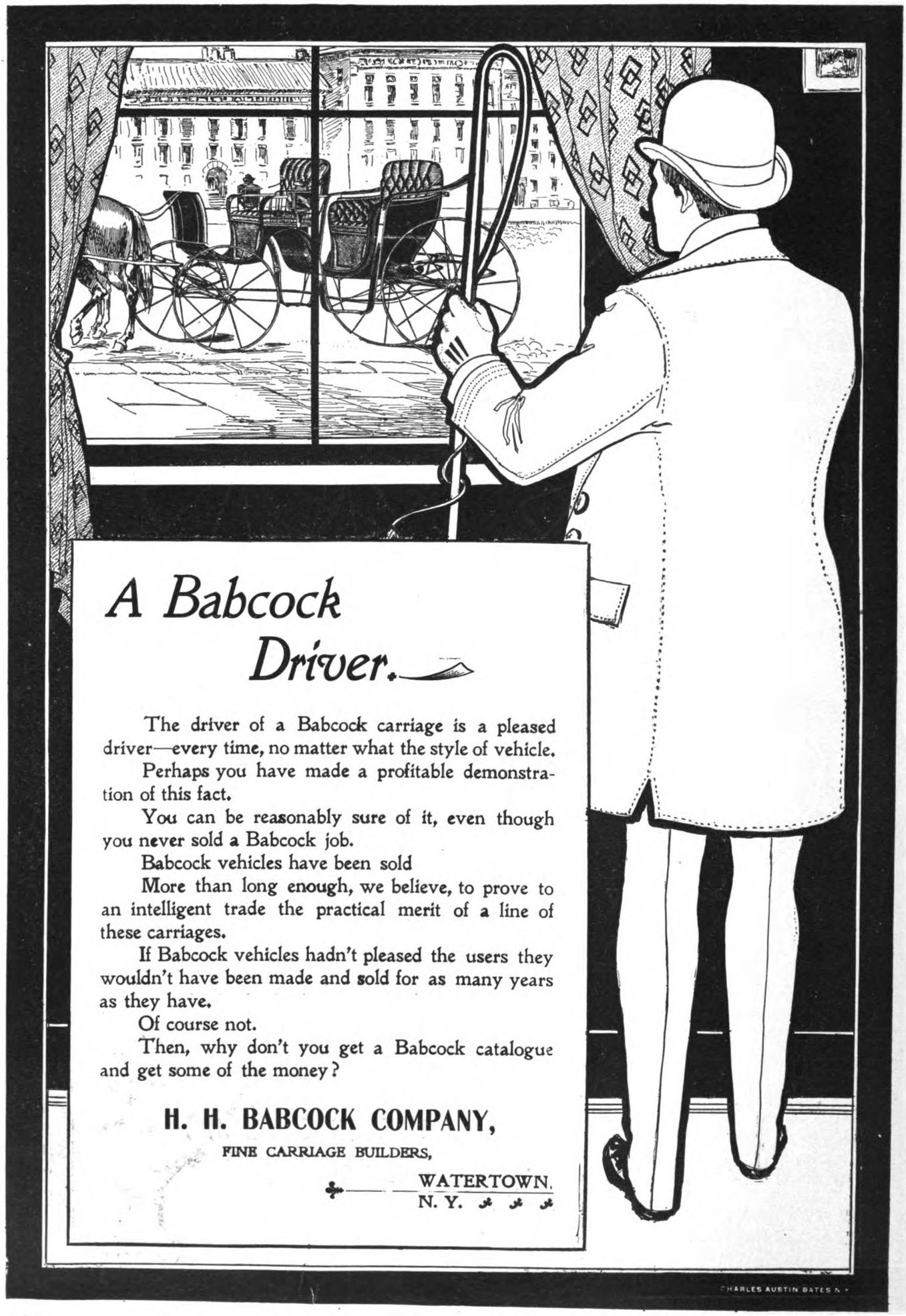
Our Sarven Patent Wheel Farm Wagon

One of the many styles we are building : : : : :



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A Babcock Driver.

The driver of a Babcock carriage is a pleased driver—every time, no matter what the style of vehicle.

Perhaps you have made a profitable demonstration of this fact.

You can be reasonably sure of it, even though you never sold a Babcock job.

Babcock vehicles have been sold

More than long enough, we believe, to prove to an intelligent trade the practical merit of a line of these carriages.

If Babcock vehicles hadn't pleased the users they wouldn't have been made and sold for as many years as they have.

Of course not.

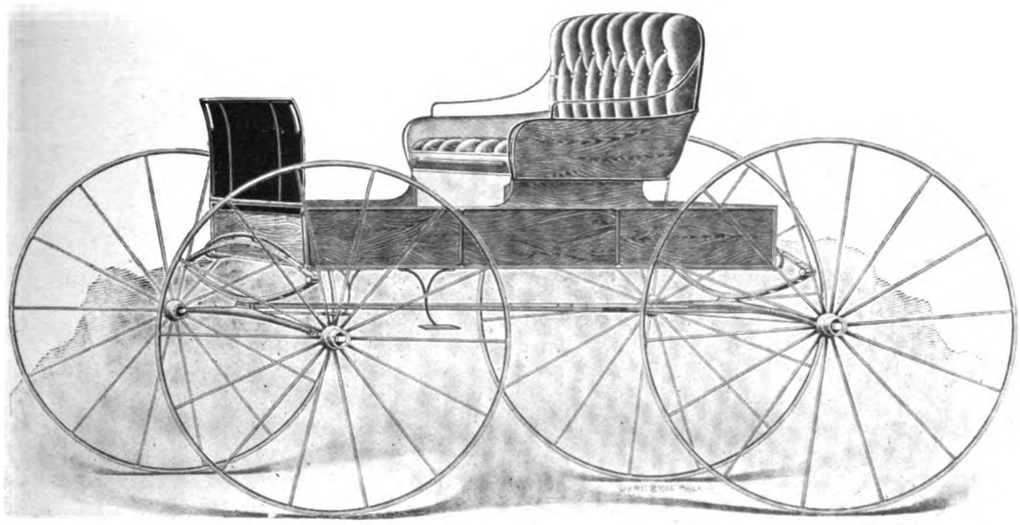
Then, why don't you get a Babcock catalogue and get some of the money?

H. H. BABCOCK COMPANY,

FINE CARRIAGE BUILDERS,

WATERTOWN, N. Y.

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No. 60.

ONE OF OUR NEW ONES FOR SEASON OF 1901-02.

FITTED WITH OVAL AXLES, SOLID COUPLINGS,

REACH HEELS AND STAY ENDS.

The Buffalo Spring & Gear Co.

BUFFALO, N. Y.

Manufacturers of Vehicles in the White for the Trade.

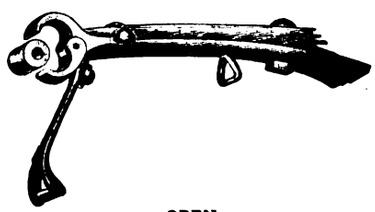
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BAILEY'S SHAFT SHACKLE

IS CALLED THE

BULL-DOG

A SHAFT shackle is the connecting link between a carriage and its motive power. Up to the time the "Bull-Dog" was invented shaft shackles were imperfectly made, noisy, clumsy in appearance, constructively weak and unsafe. To embody all the qualities necessary to a perfect shaft shackle, it should be safe, silent, simple, strong, neat, quick-shifting, interchangeable. The Bull-Dog shaft and pole shackle embodies every feature necessary to a perfect mechanical device. Shaft shackles must have rubber around the bolt of sufficient size to absorb the constant vibration caused by contact of the wheels with uneven roads and pavements. This cushion feature has stood the test of years, and become a fixed fact. Those that are good are good because they are cushioned around the bolt with rubber. The Bull-Dog is the best because it has more rubber around the bolt and is a quick shifter. The shackle eye is a trifle narrower than the ears, and the inside diameter is smaller in the middle, thus gripping the rubber harder at that point and pressing it firmly toward the ends. All contact or rattle from sidewise throw of the shaft is thus prevented. Result: absolute silence, little or no wear. The Bull-Dog shackle is absolutely safe. Closing the lever locks it in a little notch, and there it stays until you open it. The end of the lever is turned up and a loop made in it, so that if a connecting strap between the shaft and axle is used—as is usual—it may be passed through the loop in the lever handle, and then through the check loop on the shaft; they are close together. If this is done, the lever cannot be unlocked by any possible means until the strap is removed. It is impossible for the Bull-Dog shackle to come open until you want it to. With the Bull-Dog shackle the draft comes on the main part of the iron, which is welded on and made a part of the shaft iron. The load is pulled by an integral piece of metal. On the Bull-Dog shackle the check loops are made of forged steel. The edges of shackle and parts of the jam where they come together are "rounded," so they cannot pinch and "bite" the rubber. The construction of the Bull-Dog shackle in every part insures the utmost strength, durability, and safety. The Bull-Dog shackle can be applied to any shaft or pole without changing the shackle part on the carriage. The rubber spool is large enough to admit a full-size bolt and still give plenty of rubber for a cushion. The Bull-Dog shaft-eye will fit any bolt in use. The Bull-Dog shackle combines all possible good features; the jaws open, as shown in the illustration, without the use of any tool. The movement is as simple as buttoning a door, and very similar to the action of the common lever-lock on a butcher's refrigerator door. The lever works either way; may be operated with either hand, and when turned so that the shackle can be opened forms a handle to open it by. Then with the shafts on the ground they may be lifted out readily. Nothing can be quicker or simpler. A letter from a man who uses the Bull-Dog shackle says: "I can take out my shafts and put in my pole while the stable boy is going for a wrench to take off the nuts of the old shackle." He names thirty seconds, but thinks it can be done in less time. That's quick, but the record is quicker than that. The simplicity of the Bull-Dog shackle is so apparent that it hardly needs comment. It has no complications nor intricacies, nothing to slip or get out of order or to puzzle over. A child can operate it effectively and safely. It is accident-proof, "fool-proof," and stays locked till you open it. In appearance it is neat and trim. At a casual glance it would not be distinguished from an ordinary shaft-eye. The pole-eye is equally neat and effective. Merit always meets with appreciation. The merits of the Bull-Dog shackle and its superiority over any other device on the market are obvious and indisputable. The minute a purchaser understands the difference between the Bull-Dog and any one of the numerous other shackles, just that minute he will insist on a Bull-Dog shackle, because it insures the comfort, convenience, and safety of himself and family. Every carriage dealer or manufacturer will at once recognize the importance of it as an inducement to his customers. The cost of the Bull-Dog shackle is very little more than that of a common shackle. It can be put on a carriage without materially increasing its cost, but will add substantially to its selling value.



OPEN.



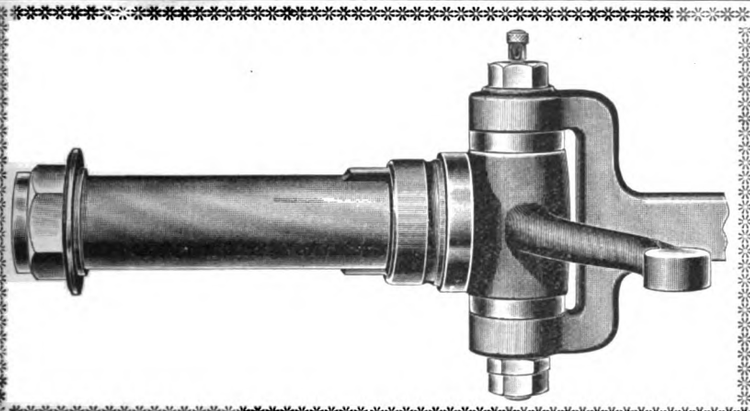
LOCKED.

The Bull-Dog shaft shackle was originally intended for use exclusively on the Bailey Whalebone Road Wagon; but, finding there was a large market for it as a specialty, it is now used in all classes of carriages.

S. R. BAILEY & CO.,

Amesbury, Mass., U. S. A.

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DALZELL PATENT

AXLE

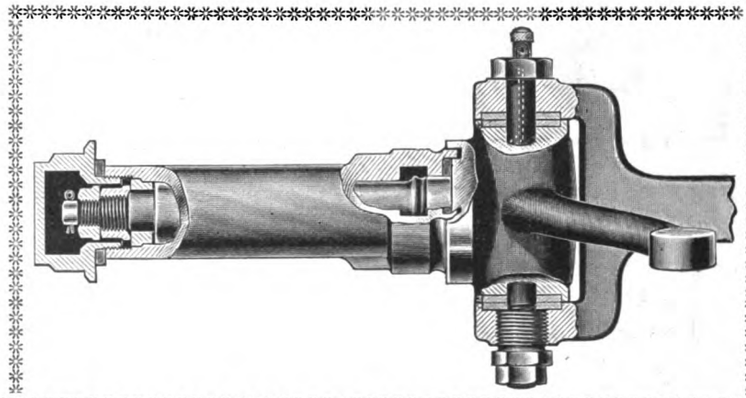
FOR

AUTOMOBILES.

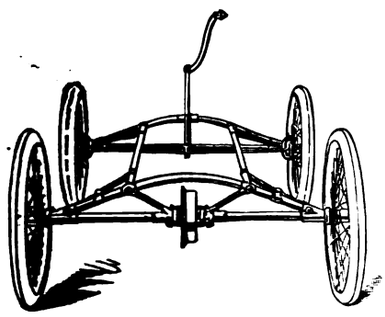
Dalzell Axle Co.

SOUTH EGREMONT,

MASS.



Automobile Running Gears.



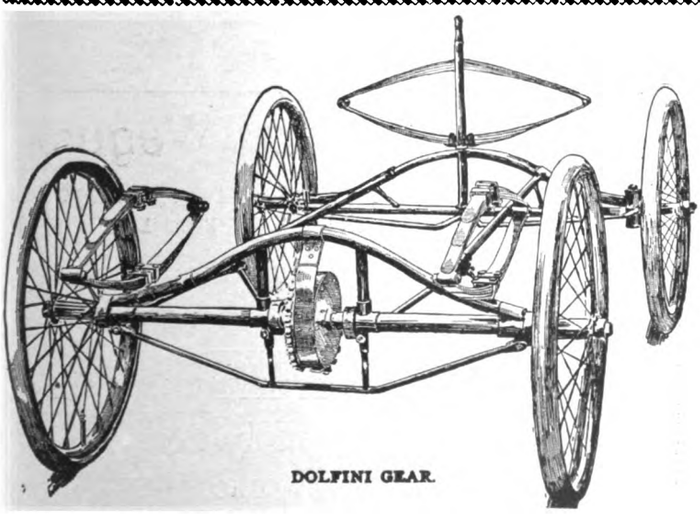
We make a specialty of gears suitable for Gas, Steam or Electric power. Our gears have been in use with good results to buyers. They are adapted for all classes of road work without straining.

Side or Centre Steering.

SIMPLICITY, SPEED, SERVICE.

READING AUTOMOBILE & GEAR CO.,

10th and Exeter Streets. READING, PA.



DOLFINI GEAR.

Complete Running Gears and Fittings.

SPECIALLY ADAPTED TO THE USE OF CARRIAGE MANUFACTURERS, IN GASOLINE, STEAM OR ELECTRIC VEHICLES

ONLY ONE GRADE..... THE BEST.

Brooklyn Automobile Supply Co.,

332 CLASSON AVENUE,

BROOKLYN, N. Y.

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LUBRICATES

the delicate motive mechanism. Will not gum, collect dust or dry out. A little oil lasts a long time.

CLEANS AND POLISHES

the nickel plated parts, metal trimmings and fixtures. Keeps them bright and shiny with little labor; also protects and preserves the high finish of the wood—removing scars and scratches.

PREVENTS RUST

and tarnish on every metal part by forming a delicate oily coating that defies dirt and dampness.

ALL AUTOMOBILE OWNERS

want "3 in 1." If they don't know it, tell them, and sell them. Other dealers do, why not you?

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Formerly

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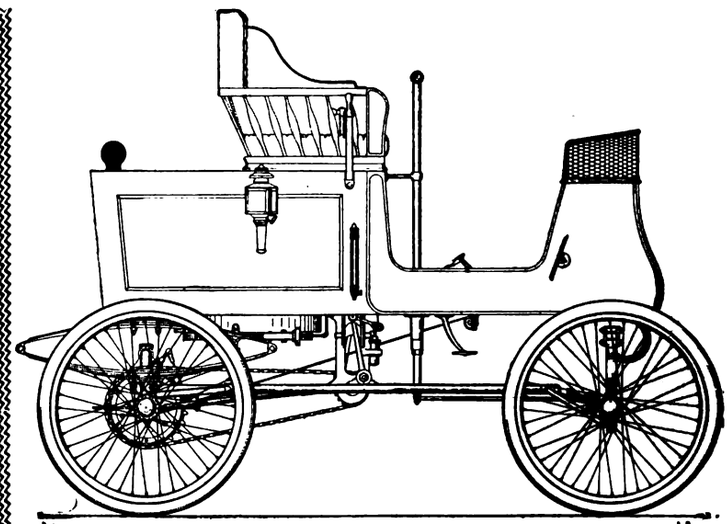
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Write for Prices and Full Information.

The Geneva Automobile & Mfg. Co.
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Simple
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Our Tracto-Surrey, - Price, $625
Or with Rubber Tires on Rear Wheels, $650

ANY vehicle at present drawn by a horse can be converted into an up-to-date Automobile—one possessing numerous patented improvements not found in any other make. The above illustration shows a "CONVERTED" Surrey, formerly used as a Horse-drawn Vehicle. We have removed the neat shield or guard which is used to cover the mechanism and the battery of Patent "Unit" Boilers, in order that the simplicity of design, strength of construction and accessibility of working parts may be appreciated.

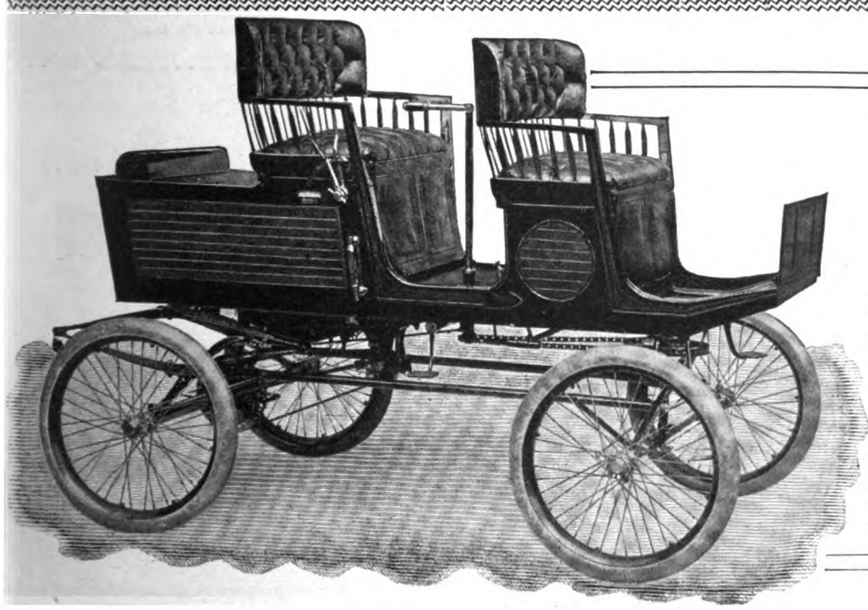
Legally protected throughout the world; $500 reward offered for information which will convict infringers.

We are Steam Motor Manufacturers—not Carriage Builders. The co-operation of the Carriage trade, smiths, etc., respectfully solicited. Special terms.

Price of Tractobile alone, ready to couple up to any vehicle, is $450 F. O. B., our works, Gettysburg Junction, Pa. The tracks of two railroads run through our shops, and our shipping facilities are excellent.

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SALES DEPARTMENT

Pennsylvania Steam Vehicle Co., Inc.
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OUR UP-TO-DATE

Surrey.

Will track ordinary County roads. Gasoline tank holds 10 gallons, sufficient for 100 miles of travel, 12 to 18 mile speed.
Superb Hill climber.
Patent Pilot Light.
Forward and backward brakes.

Milwaukee Automobile Co.



A Long Distance Wagon for Business.

BUILT TO RUN 200 MILES WITHOUT REFILLING.
NO MACHINERY IN THE BODY WHATEVER.

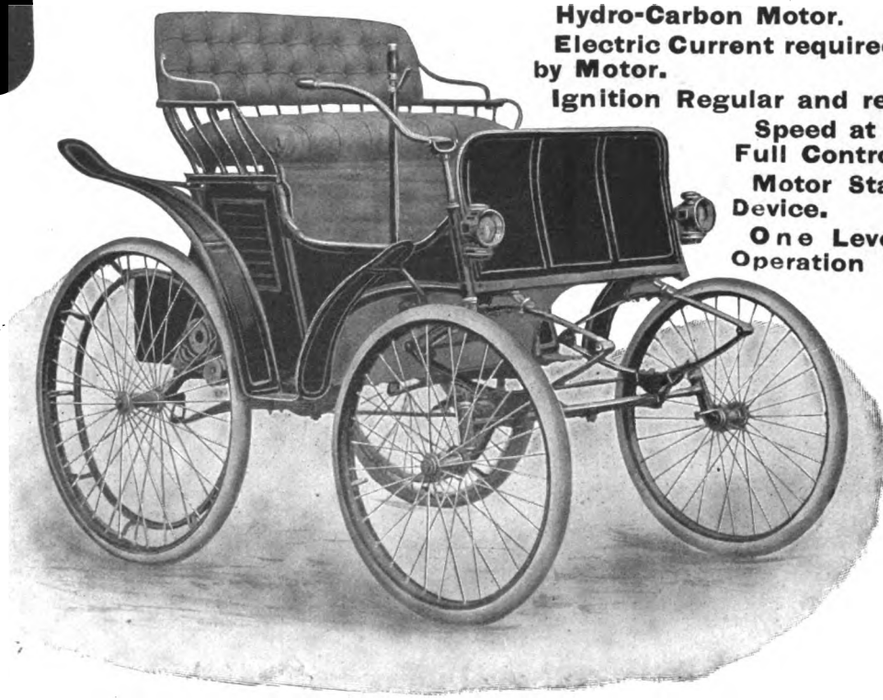
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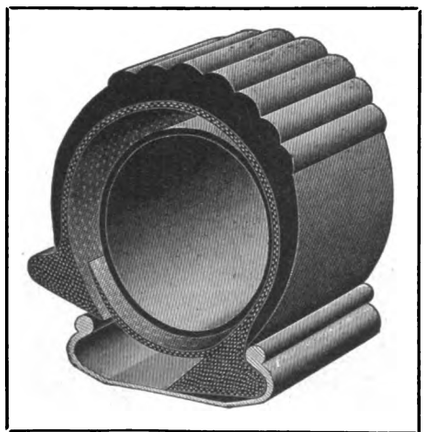
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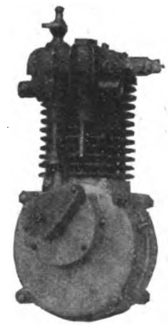


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Also Motors for Bicycles and Launches.

Castings and Working Drawings.

Lowell Model Co.,

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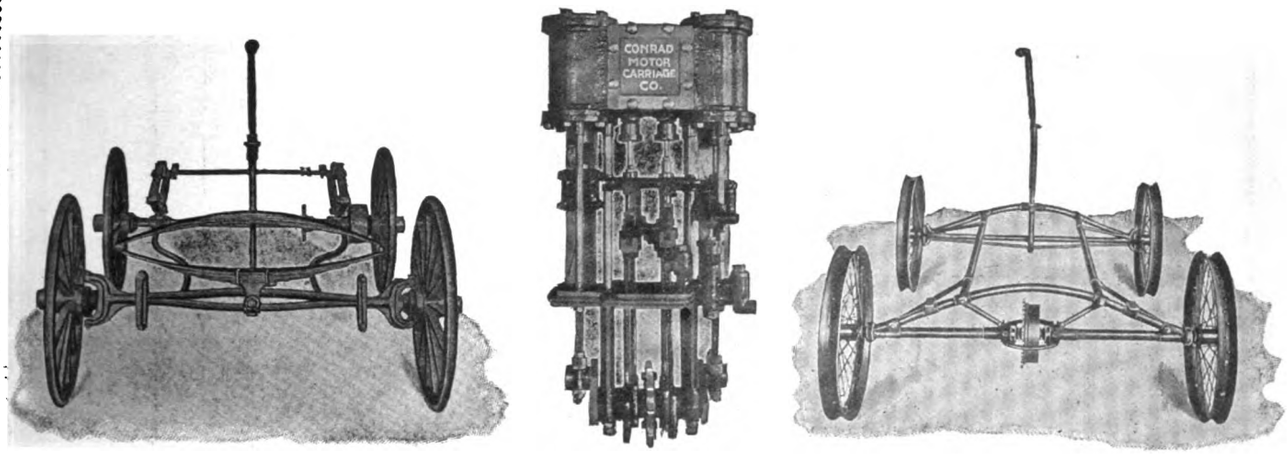
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STEAM DELIVERY WAGONS.
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Carriage Builders, build your own Automobiles. We can furnish you the parts, together with blue prints, and all necessary data, for piping up and assembling your first jobs.

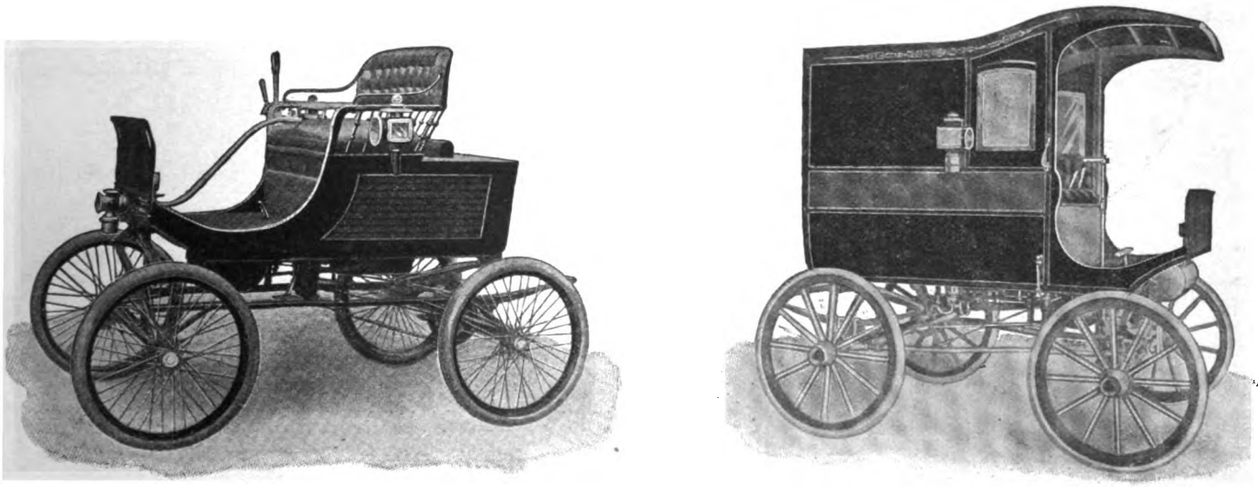
Our Steam Carriages are running successfully, and have all the latest improvements.

Catalogue on application.

THE CONRAD MOTOR CARRIAGE CO.,

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FACTORY OF THE MOBILE COMPANY OF AMERICA. VIEW LOOKING SOUTH.

THE "MOBILE" A CARRIAGE FOR EVERY-DAY USE.

ON June 10th, four "Mobiles" started in the middle of the afternoon from the factory of The Mobile Company of America at Kingsland-Point-on-the-Hudson and ran to West Point, reaching the ferry at Garrisons in time for the 5:15 boat. Two hours and a half were spent in running about the Military Academy roads, then, after dinner, the four carriages started home by moonlight. The road from Kingsland Point to West Point is hilly, with many steep gradients scattered over its length; but from the State Camp at Peekskill through the Highlands of the Hudson to West Point occur long climbs and very steep and rough roads. The distance traveled was approximately, including the running at the Academy grounds, sixty-five miles. Not a delay or accident of any kind occurred; not a moment's worry to anyone of the eight people who made the journey. The "Mobiles" were in as good condition at the end as at the start—not one, but the entire four—and one of them had come up from New York to Kingsland Point before starting for West Point.

This gives an idea of what the "Mobile" is—a splendid piece of machinery, satisfactory in all its parts, of the best quality and workmanship throughout. Price, $750. All visitors can inspect every department of the manufacture of "Mobiles." Twenty-five trains stop at Philipse Manor, the station on the company's grounds.

For information regarding "Mobiles" address

THE "MOBILE" COMPANY OF AMERICA,
PHILIPSE MANOR STATION, TARRYTOWN-ON-THE HUDSON, N. Y

NUTTALL GEARING.



Theoretically Correct.

Cut Bevel, Mitre, Spur and Internal Gears and Pinions for all classes of Automobile work. We are thoroughly equipped for this style of gearing and can satisfy you in the way of prices and deliveries. Will quote from Blue Prints, Sketches or Specifications.

R. D. NUTTALL COMPANY,
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THE popularity of the "Oldsmobile" has become so marked that we take this opportunity to notify all imitators and infringers that, while our motor is covered by our engine and designed patents, we have a number of applications for patents upon the mechanical improvements in our device, which are allowed, covering nearly every part of the machine.

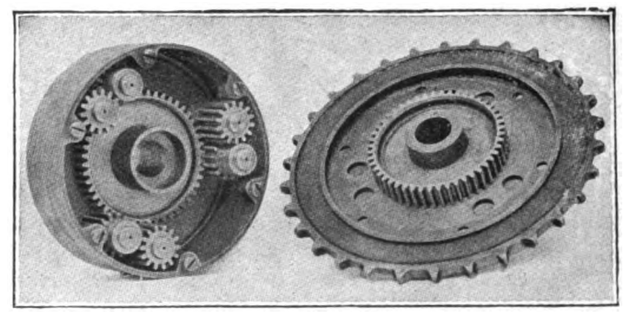
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Olds Motor Works,

53 CONCORD AVENUE,
DETROIT, MICHIGAN.

Models 1, 2 and 6

Are of this design, differing only in size, capacity and price.

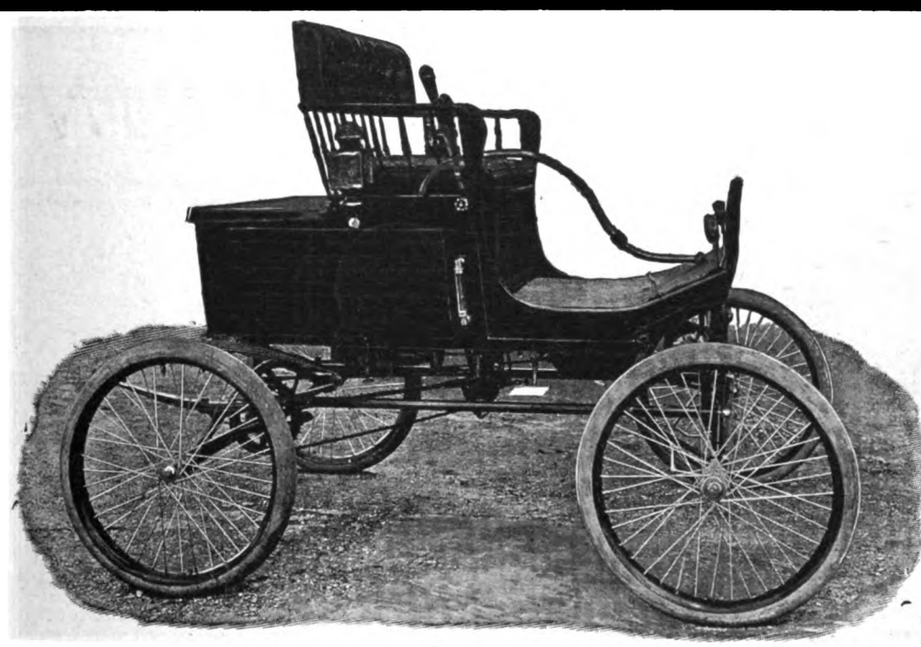


Spur gears and pinions cause no spreading of the axle. They run smoother, last longer and are cheaper. Self-oiling. One less part of an automobile to think about.

Model 4 (for the heaviest vehicles) was illustrated in the August issue. We have other models. When we can't supply from stock we make to order. Sprockets of all kinds a specialty.

Brown-Lipe Gear Co.

212 S. Geddes Street, Syracuse, N. Y.



IN recognition of the importance of the industry established by The "Mobile" Company of America at Kingsland-Point-on-the-Hudson, the New York Central & Hudson River Railroad has established a station at the factory of The "Mobile" Company with a service of twenty-five trains a day.

The original Philipse Manor, two hundred and twenty years old, still stands on the company's property, and the railroad company has appropriately, in view of its historical and literary associations, given this name to the station. The run from the Grand Central Station in New York is one hour. The manor house and old mill and Sleepy Hollow are part of the company's property, connected by the Headless Horseman's Bridge. The old Dutch Church, and Washington Irving's grave and the monument marking the spot where André was captured, are in the immediate vicinity. When you visit New York, you will find a trip to the factory of

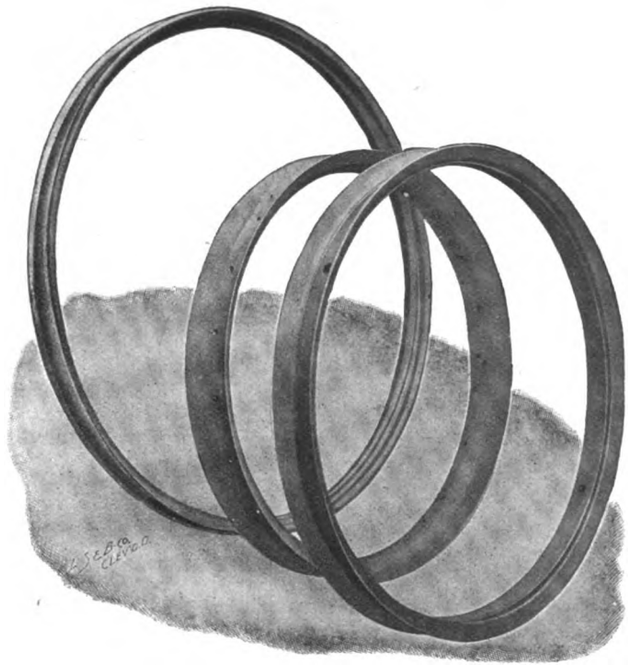
THE "MOBILE" COMPANY OF AMERICA

quite worth a half day's outing. Kingsland Point itself is considered to be the most beautiful section of the Hudson. The visitor is looked after by The "Mobile" Company's corps of demonstrators, taken for a ride in a horseless carriage, and shown all the different processes which enter into the fifteen departments required to manufacture a horseless carriage. He may inspect both quality of material and workmanship, see the new carriages tested as they are taken from the works one after another, and have every opportunity to satisfy himself of the excellence of the carriage in every particular. **Price, $750 Complete.**

THE "MOBILE" COMPANY OF AMERICA, Philipse Manor Station, Tarrytown, N. Y.

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CRESCENT AND DROP CENTER PATTERNS.

Sizes—From 1¼ inches up to 4 inches in section; from 28 inches to 5 feet in diameter.

WE ALSO MANUFACTURE

SHEET STEEL MUDGUARDS.

Blue prints on application.

Vehicle cups for ball bearings, taking from ⅜ inch to ¾ inch balls.

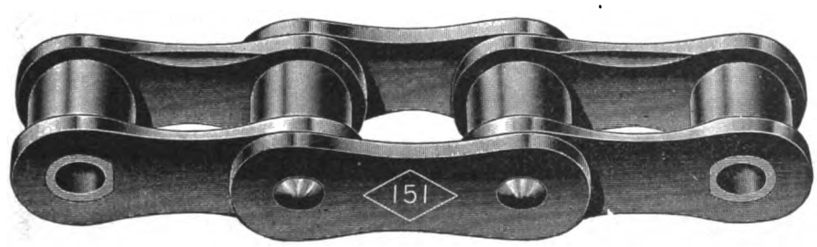
For further information apply to

The Automobile and Cycle Parts Co.

SMITH STAMPINGS FACTORY,

Milwaukee, Wis.

AUTOMOBILE CHAINS.



No. 151 "Diamond" Automobile Chain.

Pitch, 1¼ inches; width, ½ inch; diameter of rollers, ⅝ inch; thickness of sides, .125

This pattern has polished straw tempered hard rollers, hard steel bushings (**not split**), hard rivets, full polished blue 8 sides "chanfered." **Its tensile strength is 6,500 pounds.**

We have been making chains, and nothing else, for nine years. Our factory is exclusively equipped for chain manufacture. It is the largest chain plant in the world.

The characteristic qualities of "Diamond" Chains are **accuracy, strength, uniformity and finish.** Prices on application.

THE AUTOMOBILE AND CYCLE PARTS CO.

DIAMOND CHAIN FACTORY

INDIANAPOLIS, IND.



Tool Steel Balls.

We have the largest and best equipped plant in the world devoted to the manufacture of hardened and polished tool steel balls. The steel used is made expressly for us and is the result of a long and exhaustive series of experiments which have resulted in producing a uniformity of hardness, toughness and wearing qualities never before attained.

Our regular stock line consists of Tool Steel Balls in sizes from ⅛" to 4" in diameter. We can grind balls to any of the intermediate sizes at special prices which will be promptly quoted upon application. Can also furnish balls in Bessemer steel, brass, bell metal, etc.

The Automobile and Cycle Parts Co.,

CLEVELAND BALL AND PEDAL FACTORY,

CLEVELAND, OHIO.



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The Hub

(THE HUB NEWS.)

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Entered at the New York Post Office as Second Class matter.

VOL. XLIII. NEW YORK, SEPTEMBER, 1901. No. 6.

Publishers

TRADE NEWS PUBLISHING CO. OF N. Y.

24-26 MURRAY STREET, NEW YORK.

W. H. TAYLOR, *President.*

WALTER D. GREGORY, *Secretary and Treasurer.*

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THE HUB is published monthly in the interests of employers and workmen connected with the manufacture of Carriages, Wagons, Sleighs, Automobiles and the Accessory trades, and also in the interests of Dealers.

Subscription Price for U. S., Canada, Mexico, Cuba, Porto Rico, Guam, The Philippines, and the Hawaiian Islands, $2.00, *payable strictly in advance.* Single copies, 25 cents. Remittances at risk of subscriber, unless by registered letter, or by draft, express, check, or post-office order payable to the order of TRADE NEWS PUBLISHING CO.

For advertising rates, apply to the Publishers. Advertisements must be acceptable in every respect. Copy for new advertisements must be received by the 25th of the preceding month, and requests to alter or discontinue advertisements must be received before the 12th day of the preceding month to insure attention in the following number. All communications must be accompanied by the full name and address of writer.

FOREIGN REPRESENTATIVES.

FRANCE.—L. Dupont, publisher of *Le Guide du Carrossier,* 78 Rue Boissiere, Paris. Subscription price, 15 francs, postpaid.

GERMANY.—Gustave Miesen, Bonn a. Rh. Subscription price, 12 marks, postpaid.

Last Call, C. B. N. A.

THIS is the last time that THE HUB will have an opportunity, before the month of meeting, to call attention to the next annual convention of the Carriage Builders' National Association, to be held in Cincinnati. The secretary has sent out his official circular, notifying exhibitors of materials as to the cost of space, and conditions of exhibits, and those who contemplate exhibiting, who have not made the necessary arrangements, should do so immediately, and avoid unnecessary annoyance later on. The value of these exhibitions is so well known that no man need hesitate on the score of expense, especially as the association puts that at a figure that barely covers the cost of hall and attendance. So far as special matters are concerned, there is nothing that is likely to agitate the convention now on the list of subjects for debates, the questions that bid fair a year or two ago to create a division of opinions have been adjusted, and there is not likely to be any friction. It will be, therefore, a good time to discuss matters pertaining directly to the betterment of the carriage industry, and in that line nothing suggests itself with greater force than the developing of our export trade. This has shown some improvement during the past year, but how much none can tell, as our customs department makes no division that will show the aggregate quantity of carriages and wagons shipped to other countries. Cars for steam and street railroads are classified with vehicles, and so misleading are the classifications that in the published reports of vehicle exports in one case a number of "trucks" were included, whereas these trucks were hand and floor trucks used for moving merchandise in stores and warehouses. The valuation added was such as to show that they could not belong to trucks as understood by the carriage or wagon trades, being less than $5 each; yet the amount was classified with the aggregate value of carriage, wagon and vehicle exhibits. We feel that if proper representations were made to the department that pleasure carriages, farm and business wagons would be made a distinct class, thus affording some idea of the value of exports in these lines without detriment to others. It might be useless to agitate the timber question, as nothing has ever been done of value in that direction by committees appointed to look into the subject; but we are rapidly approaching a crisis in that direction, and unless something is done to arouse interest in the production of hickory and white ash the time is not far distant when these valuable woods will cease to be factors in the wheeled vehicle industry. There seems to be a feeling that the whole matter will adjust itself, but the present consumption cannot continue long without denuding the southern and southwestern forests as completely as are those of the older sections in the eastern and middle States. THE HUB suggests the advisability of looking into the matters mentioned, and the possibility of there being others that call for equal attention, and can see no better time than at the meetings in October next, as every indication points to a very large gathering in the hospitable city of Cincinnati.

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Horse Show Judges.

THE horse shows now so numerous, both open-air and in the large amphitheatres, have exerted a wonderful influence in the direction of increasing the love for carriage and horse-back riding, and in improving the quality of horses in these lines; but they have not accomplished the good they could have done in raising the standard of excellence in equipments complete, simply because of the failure to select for judges men who could see over the horse. Prizes are offered for broughams, cabriolets, ladies' phaetons, runabouts, gentlemen's road wagons, and four-in-hands, in which horses, carriages, harness and equipments contribute in determining the awards, and with the single exception of the one-man wagon and horse, or team, the awards have not been so distributed as to induce gentlemen or ladies to pay much attention to aught but the horses. As a rule, the enthusiastic horseman can see no merit in a turnout unless the animal or animals come up to his standard of excellence. He would favor a high-grade team before an enlarged go-cart, to a good team well harnessed before a Brougham in which all the appointments are perfect, notwithstanding that one-half of the percentage of merit was to be awarded for the harness, vehicle and equipments. We have seen at the Madison Square Garden horse show the finest all-around brougham turnout fail of obtaining an award, while the first prize was placed on a team hitched to an out-of-date vehicle, and a harness that was old, and which no harness-maker having his reputation at stake would duplicate and allow to hang in his warehouse an hour, all because the team was of a higher grade than the one hitched to a brougham of the latest model. A notable instance of overlooking true merit in all but the horses occurred in the Garden show, when one of the finest ladies' phaetons that has been seen in New York for years was overlooked, notwithstanding the harness and appointments were well-nigh perfect and the team correctly hitched. The team was a fine one, but was not up to the highest standard, and yet if the judges marked the team 10 per cent., and marked vehicle, harness and appointments as they should, the blue ribbon would have been theirs. We are not disposed to charge incompetency or favoritism to the judges. On the contrary, they were undoubtedly good judges of horses, and might have been of vehicles, etc., had they had eyes for anything but the horses; and we believe it is because of the failure to do justice to the turnout as a whole that the classes in which the vehicle and equipments are to count do not fill as they should. We certainly would not make an entry in any of these classes, even if our harness, vehicle and equipments were of the latest style and highest standard of excellence, unless we were satisfied that the horse would win even if hitched to a back-woods buckboard. We have frequently called attention to this neglect on the part of the judges to consider other merits than that of the horse, and have wondered that after the experiences of previous meetings that any entries were made in the classes where vehicles count. The expert horseman, not driver, is narrow-minded and priggish. He knows every good point in the animal, and because of such knowledge he allows no man to influence him, nor no condition to change his opinion, and owing to his narrowness of vision there should not be more than one such as he on a jury of judges when awards depend upon other conditions. The bad results of awards in the carriage and equipment classes could be overcome if experts in harness and carriages were among the judges. Let there be three, one an expert on the horse, another on the harness, and a third on the carriage; the latter two would most likely be experts on equipments. Suppose the judges included an expert harness manufacturer, like W. L. Tompkins, of Newark, N. J.; an expert carriage builder like W. H. Atwood, of New Haven, Conn., or some other harness and carriage men equally well qualified, and the third an equally competent judge of the horse. Who can doubt but such a trio of judges would give the blue ribbon to the team and vehicle best answering the printed conditions governing the award. With such to judge, owners of fine turnouts would be encouraged to get together the best possible combination, knowing that the winner would be entitled to the award. The result would be an immediate improvement in all appointments, the exhibition of the latest and finest grades of carriages and harness, and the entire driving world would feel the importance of a better knowledge of all the points that go to make a perfect turnout. Who will make the first move in the direction of selecting qualified judges?

What Is Style?

THE controversy that is now agitating the feelings of an American carriage journal and an English contemporary, as to what constitutes good style, possesses some points of interest, and warrants reading what each has to say; but we doubt if any real practical value can be obtained. If the matter related entirely to what constituted good mechanical and scientific construction, the situation would be more interesting, as mechanical laws operate alike in every land; that is, if better results can be obtained by a certain method of construction than possible by another, then those who followed the least valuable method would be fit subjects for criticism; but when the entire controversy centers on good taste, the critic treads a dangerous road, when the matter pertains to people of different nations. The beautiful to the one may be the ugly to the other, and each would be right in their conclusions, as reached from different standpoints. In the matter of carriages, education, customs and surroundings all contribute to the deciding of what is in good taste. The bright liveried, powdered coachman and footman does not seem out of place even to the American eye when seen in London, but even an Englishman would see the incongruity if the same were seen in New York. The three great carriage producing countries of Europe—England, France and Germany—each have distinct types. These please their own people. They may not please us, but we are not competent to criticise as between them and us. We may and should specify our own types, but we have no right to say that all who do not agree with us are wrong. No people in the world are so free to adopt ideas from other countries as ours. We see much to admire in English solidity, and copy very closely some distinctively English types of carriages. We also admire the artistic delicacy of the French, and are not slow to follow these somewhat erratic but artistic people. We see less in the German than in other types that please us, but are ready to adopt anything that appeals to our tastes. We have our own ideas, and adhere to them tenaciously. We believe they best represent American art in vehicle construction, and notwithstanding some most fearful blunders, we produce vehicles that are considered both artistic and exclusive. That we cannot force our ideas upon others is proven by the slow progress made in our exports of American specialties, and by the fact that where we have done the best, we have embodied into our vehicles some of the favored characteristics of the people's choice in the countries where our vehicles are sent. We shall watch with interest the controversy between our contemporaries in the carriage trade journal field, but we do not believe that either will prove his case to the satisfaction of the other.

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CARRIAGE BUILDERS' NATIONAL ASSOCIATION.

CINCINNATI, OHIO, OCTOBER 21, 22, 23, 24, 25, 26, 1901.

OFFICE OF THE SECRETARY,
WILMINGTON, DEL., Sept. 2, 1901.

TO THE MEMBERS OF THE CARRIAGE BUILDERS' NATIONAL ASSOCIATION:

The twenty-ninth annual meeting of the Carriage Builders' National Association will be held in Cincinnati, Ohio, October 22, 23 and 24, 1901. The annual exhibition of parts of carriages, wagons and automobiles, gears, wheels, springs, axles and materials used in their construction; harness, horse equipments, etc., will be held in machinery section of Music Hall, beginning with Monday, October 21st, and continuing through the week.

Application for such rooms as may be desired can be sent direct to the hotels.

Arrangements have been made with the New England Passenger Association, Trunk Line Association, Central Traffic Association, Southeastern Passenger Association and Western Passenger Association for railroad rates on the certificate plan for one and one-third fare.

These associations collectively practically cover the country east of the Rocky Mountains.

This concession in rates, as granted, covers all relatives and friends of members who wish to attend the convention.

THE ANNUAL BANQUET

will be given at the Armory, on Thursday, October 24th. As Music Hall is some distance from the hotels, the local committee of Cincinnati have kindly furnished us with the following directory of the street car lines, so as to aid our members in going to and from the hall. "Fountain Square," Fifth street, from Main to Vine street, is the center of the street car systems of Cincinnati, and all lines converge here. The fare is five cents, with free transfers in the same general direction.

Street car lines run direct from the hotels to Music Hall.

This section of Music Hall is very large, and will afford ample room to display the exhibits to great advantage.

THE BUSINESS MEETINGS

will be held in the assembly room of the Grand Hotel, Central avenue and Fourth street. As Cincinnati is so well known to the trade, your committee do not think it needful to call your attention to the many interesting features of that city, but consider all that is needed to say is, as one of the largest centers of the carriage industry, it offers exceptional advantages as a meeting place for those engaged in that business, and as the exhibition promises to be a very fine one, your committee feel sure you will be amply repaid for your attendance.

The local committee of Cincinnati have made ample arrangements for the comfort and pleasure of our members, and assure all who attend the convention that they will be well pleased with their visit to their city. Cincinnati is amply provided with good hotels, at rates to suit all.

THE OFFICIAL HEADQUARTERS.

will be at the Grand Hotel, corner Central avenue and Fourth street. This hotel is conducted both on the American and European plans. The rates per day on the American plan are $3 to $5, and on the European plan, $1 to $3, according to location of room.

HOTELS ON AMERICAN PLAN.

Burnet House, Vine street above Third; $3 to $5 per day.

Palace Hotel, Sixth and Vine street; $2 and upwards per day.

Denison House, Fifth and Main streets; $2 and upwards per day.

Hotel Sterling, Sixth and Mound streets; $2 and upwards per day.

HOTELS ON BOTH AMERICAN AND EUROPEAN PLANS.

Gerdes Hotel, Fifth and Home streets; American plan, $2 per day; European plan, 50 cents and upwards per day.

HOTELS ON EUROPEAN PLAN.

St. Nicholas Hotel, Fourth and Race street: $1.50 to $6 per day.

Gibson House, Walnut street above Fourth; $1.50 and upwards per day.

Hotel Honing, Vine street above Fourth; $1 and upwards per day.

Stag Hotel, Vine street above Fourth; for gentlemen only; $1 per day.

The business meetings will be held in the Grand Hotel, Tuesday, October 22d; Wednesday, October 23d, and Thursday, October 24th, at 2 o'clock p. m. The street cars run from the different hotels to or near the Grand Hotel.

HENRY C. MCLEAR, *Secretary.*

F. B. JUDKINS, *President.*

Description of Latest Styles.

ELLIPTIC SPRING "RUNABOUT."

Scale, ½ in. to the foot.

(See Fashion Plate No. 520.)

FASHION PLATE No. 520 illustrates a runabout, body hung upon an elliptic spring tubular gear with wood wheels and solid rubber tire. The seat shows a novel form and finish, the panel being finished with imitation cane work, as is also the belt line at the top edge of the body panel. The body is the standard runabout, long and roomy. The one objection to a long body of this kind being hung upon elliptic springs is the extensive length of the gear, but fashion takes kindly to this style and recognizes it as one of the necessary types of road wagons.

Dimensions of Woodwork.—Body, length, 60 in.; width outside, 24 in.; depth, 8 in.; width of seat, 30 in.; flare of sides, 3½ in.; wheels, wood hub; height, front 34 in.; rear, 36 in. Hubs, length, 6½ in.; diam. at center, 3½ in.; front end, 2½ in.; back end, 3 in. Size of spokes, 1 1-6 in.; number of spokes, 12 and 12; stagger, ½ in.; depth of rims, 1 3-16 in.; tread of rims, 1 in.; depth of bands, front 2½ in.; back, ¾ in.; distance between center of axles, 63 in.

Dimensions of Ironwork.—Springs, front 34 in. long between centers of heads, with 6½ in. openings on main leaf; width of steel, 1¼ in.; number of plates, 4; thickness, No. 4 steel. Back, 34 in. long, with 17 in. opening on main leaf; width of steel, 1¼ in.; number of plates, 4; thickness, No. 4 steel. Axles, tubular steel and ball bearings. Tires, 1 in. solid rubber. Fifth wheel, Bailey patent. Track, outside, 4 ft. 8 in.

Painting.—Body, black; cane work, light yellow; skirt, dark carmine. Gear, sulphur yellow, striped with carmine. Trimming, gray whipcord. Cushion is made without facing; back, plain and inside of seat finished at the top with a roll, which tapers toward the front. Finish, dash and seat rails black.

TWO WHEELER.

Scale, ½ in, to the foot.

(See Fashion Plate No. 521.)

FASHION PLATE No. 521 illustrates a two wheeler on the gig type, differing from the true gig in the lines of the body and seat, the latter being novel. The end panel being cut into two long triangles, the top one being slatted and the bottom made with a solid panel. The three oblong panels in the side being sunk below the mail panel and finished with narrow mouldings.

Dimensions of Woodwork.—Body, width across top, 34 in.; across bottom, 32 in.; width of seat across outside, 36 in.; depth, 10 in. Wheels, wood hub; height, 48 in. Hubs, length 7 in.; diam. at center, 5 in.; front end, 3½ in.; back end, 4¼ in. Size of spokes, 1½ in.; number of spokes, 14; stagger, ½ in.; depth of rims, 1⅝ in.; trend of rims, 1½ in.; depth of bands, front 3 in.; back, 1 in.

Dimensions of Ironwork.—Springs, side 40 in. long between centers of heads with 3½ in. opening on main leaf; width of steel, 1½ in.; number of plates, 5; thickness, No. 3 steel; cross, 38 in. long, with 4½ in. set; width, 1½ in.; number of plates, 5; thickness, No. 4 steel. Axles, 1½ in. collinge. Tires, 1½ in. by ⅜ in. Track, outside, 4 ft. 8 in.

Painting.—Body, black. The triangular panel of seat and body, light olive green. The three small panels on sides of body are also light olive green. The moldings of seat and body, carmine. Gear, carmine, striped a ¼ in. line of black. Trimming, maroon colored cloth. Back and dickey seat, plain; half cushion, squabbed. Finish, lamps black.

CANOPIED ROAD WAGON.

Scale, ½ in. to the foot.

(See Fashion Plate No. 522.)

FASHION PLATE No. 522 illustrates a convenient and comfortable wagon for summer use. The low front makes it accessible for ladies,

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while the roomy seat and body contribute to the comfort and convenience of the riders. The umbrella canopy top serves as a protection from the sun's rays. The gear is an up-to-date tubular with low wood wheels and solid rubber tires. This is a vehicle that can be put up well and yet be sold at a moderate price.

Dimensions of Woodwork.—Body, length over all, 58 in; width across outside at bottom, 23 in.; at top, 24 in.; width of seat across top, 37 in.; across bottom, 30 in. Wheels, wood hub; height, front 34 in.; rear, 36 in. Hubs, length 6½ in.; diam. at center, 3½ in.; front end, 2½ in.; back end, 3½ in. Size of spokes, 1 1-16 in.; number of spokes, 14 and 14; stagger, ¼ in.; depth of rims, 1⅛ in.; tread of rims, 1 in.; depth of bands, front 2¼ in.; back, ¾ in. Distance between center of axles, 55 in.

Dimensions of Ironwork.—Springs, front 34 in. long between center of heads, with 6 in. opening on main leaf; width of steel, 1¼ in.; number of plates, 4; thickness, No. 4 steel. Rear, 34 in. long, with 6½ in. set on main leaf; width of steel, 1¼ in. Number of plates, 4; thickness, No. 4 steel. Axles, tubular steel and ball bearing. Tires, 1 in. solid rubber. Fifth wheel, patent. Track, outside, 4 ft. 8 in.

Painting.—Body, black. Seat spindles and rails black; canework, light yellow. Gear, black, striped primrose yellow. Trimming, cream colored cloth; back and driver's seat, plain; cushion, squabbed.

BASKET SURREY.

Scale, ½ in. to the foot.

(See Fashion Plate No. 523.)

FASHION PLATE No. 523 illustrates a three-spring surrey in which canework has been used for seats and dash, leaving wood panels plain with no other molding than a round, slatted secondary panel under the rear seat. Basket work was never more popular than now and its use for seats is likely to become even more popular than for bodies. This surrey has all the elements in it to make it a popular vehicle.

Dimensions of Woodwork.—Body, width across top outside, 29 in.; across bottom, 28 in.; width of front seat across top outside, 40 in.; across bottom, 34 in. Width of rear seat across top outside, 42 in.; across bottom, 36 in. Wheels, wood hub; height, front 34 in.; rear, 42 in. Hubs, length 6½ in.; diam. at center, 4 in.; front end, 3 in.; back end, 3½ in. Size of spokes, 1 5-16 in.; number of spokes, 12 and 14; stagger, ½ in.; depth of rims, 1 5-16 in.; trend of rims, 1⅛ in.; depth of bands, front 2½ in.; back, ⅞ in. Distance between center of axles, 65 in.

Dimensions of Ironwork.—Springs, front 35 in. long between center of heads, with 6½ in. opening on main leaf; width of steel, 1¼ in.; number of plates, 5; thickness, No. 4 steel. Back, 34 in. long with 6½ in. opening on main leaf. Width of steel, 1¼ in.; number of plates, 4; thickness, No. 4 steel. Axles, front and rear, 1⅛ in. by 5-16 in. Fifth wheel, 12 in. diam.; track, outside, 4 ft. 8 in.

Painting.—Body, black. The seats and dash are stained an olive green. The seat riser and imitation blinds under rear seat light olive green. Gear, dark green, striped with olive. Trimming, green cloth. Dickey seat, plain; cushions and backs, squabbed. If desired a lamp can be placed on the front seat.

ROADSTER AND BIKE WAGON.

(See "Latest Styles.")

PLATE CLXIV. illustrates a turnout that attracted much attention at the Long Branch Horse Show. While there was nothing decidedly new in the rig, it was pleasing in appearance because of the neatness and correctness of all its parts.

CANOPY TOP SURREY.

(See "Latest Styles.")

PLATE CLXV. shows a very pleasing surrey, with canopy top on tubular gear, with wood wheels and solid rubber tires. The vehicle was shown at the Long Branch Horse Show, and was one of the neatest of its class at the Branch.

FOUR-IN-HAND DRAG.

(See "Latest Styles.")

PLATE CLXVI. illustrates a popular four-in-hand turnout. The drag is after the French, but the rear seat it set very high. The team were harnessed in the regulation park harness.

"TEMPLAR" FUNERAL CAR.

(See "Latest Styles.")

PLATE CLXVII. shows No. 110, style, name "Templar," all hand carved wood, drapery funeral car, shown by the Crane & Breed Manufacturing Co., of Cincinnati, O., at the Pan-American Exposition. It has no glass in it at all. The realistic and soft flowing draperies are finished in a lack-lustre paint (over the protecting varnishes) that give them the appearance of loosely waved silk. The solid panels behind the draperies and the smooth, unfluted shafts of columns are in brilliant varnish, while the capitals and the tassels of the draperies are in a half lustre, giving three tones of finish to the whole. The lamps are solid German silver of special design, with metal drapery finished to match the other draperies of the body. The hammercloth seat is cloth of the finest grade, with the finest solid genuine mohair fringes obtainable. The metal trimmings, the hub bands, toe board handles, and hammercloth handles are in black Egyptian finish, the only silver on the car being the lamps, axle, nuts and initial on the seat. Two were built, one for Messrs. L. D. Pearson & Son, of Louisville, Ky., and the other for the Pan-American. The former is giving immense satisfaction, and the latter is spoken of as one of the attractions of the Exposition —one of the things that visitors should not miss, seeing the beautiful hearse, without any glass, in the Transportation Building.

WALBORN & RIKER'S PAN-AMERICAN EXHIBIT.

(See "Latest Styles.")

PLATE CLXVIII. illustrates the display made by Walborn & Riker builders of pony vehicles and specialties, of St. Paris, O., a description of which appeared in August HUB.

GEORGE WERNER'S PAN-AMERICAN EXHIBIT.

(See "Latest Styles.")

PLATE CLXIX. illustrates the exhibit made by George Werner, carriage manufacturer, of Buffalo, N. Y., an account of which was published in August HUB.

CANADIAN SLEIGHS.

(See "Latest Styles.")

PLATE CLXXII. shows two typical Canadian sleighs. These, as well as the illustration of the Canadian caleche (Plate CLXXI.) were furnished us by Verrett & Cie, coach makers, Quebec.

ELECTRIC VEHICLE CO.'S EXHIBIT AT THE PAN-AMERICAN.

(For illustration see "Latest Styles.")

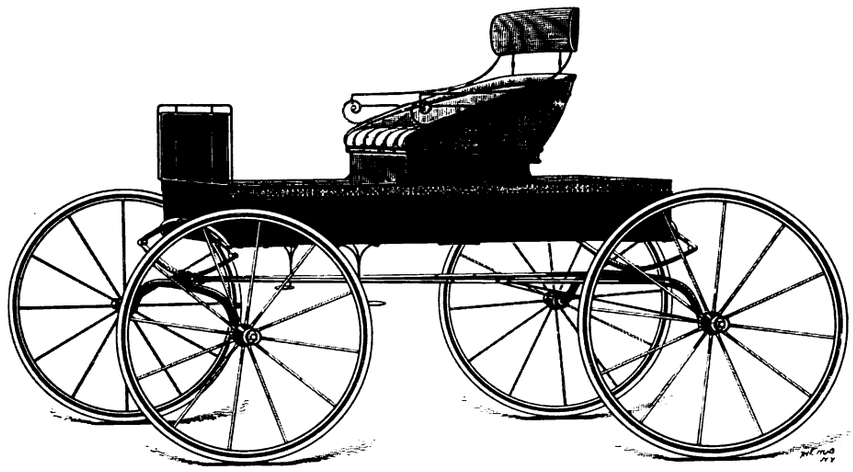
BY far the most attractive exhibit of automobiles ever made in this country is that of the Electric Vehicle Co. at the Pan-American Exposition, a general description of which is given in connection with our Pan-American article, one view of which is given this month; this serves to show the arrangement and scope of the exhibit.

A RUBBER TIRE SUIT.

A CASE that is attracting much attention among tire manufacturers is that of the Consolidated Rubber Tire Co. vs. Kelly Springfield Rubber Tire Co., of Davenport, Iowa, in which Judge McPherson, of the Circuit Court of the United States for the Southern District of Iowa, denied a temporary injunction asked for by the "consolidated" companies restraining the Davenport company from carrying on business under the name of "Kelly Springfield Rubber Tire Co." and from using tires branded "Kelly Tire," "Springfield Tire," or "Rubber Tire Wheel Co." The plaintiffs will continue the case.

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Latest Styles. September, 1901.

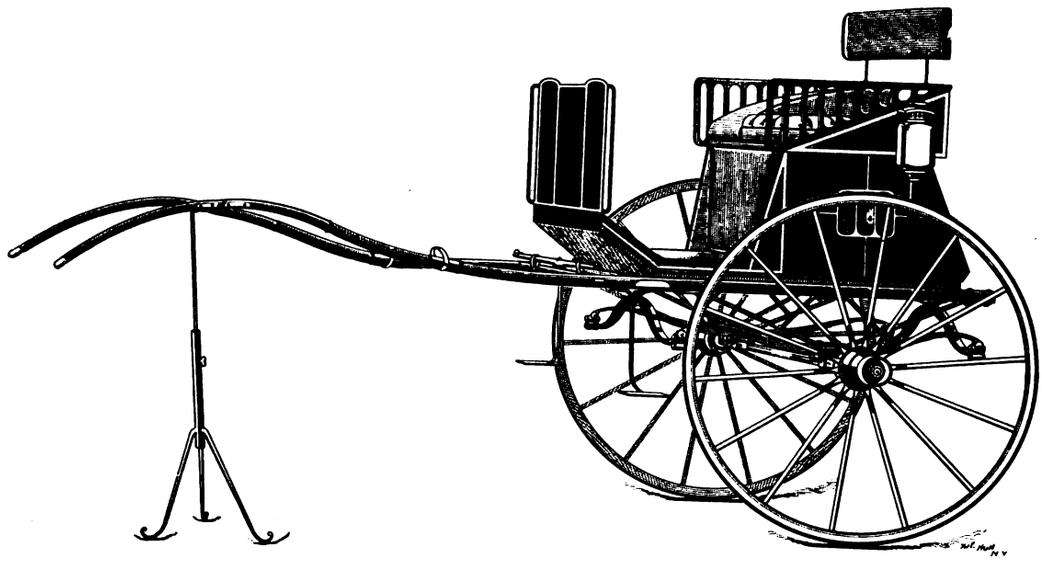


No. 520. Elliptic Spring "Runabout."

SCALE, ½ INCH TO THE FOOT.

See description under "Latest Styles."

(Electrotype, $1.25.)



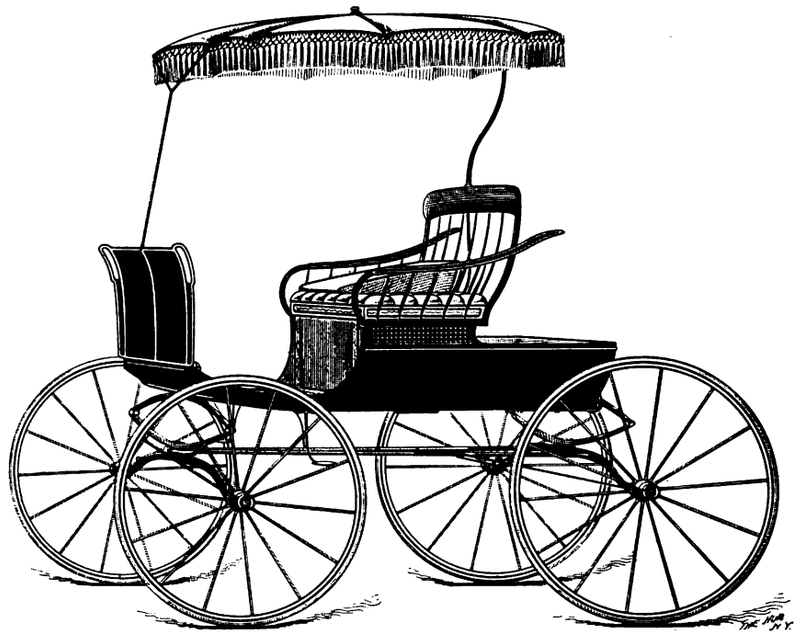
No. 521. Two Wheeler

SCALE, ½ INCH TO THE FOOT.

See description under "Latest Styles."

(Electrotype, $1.50.)

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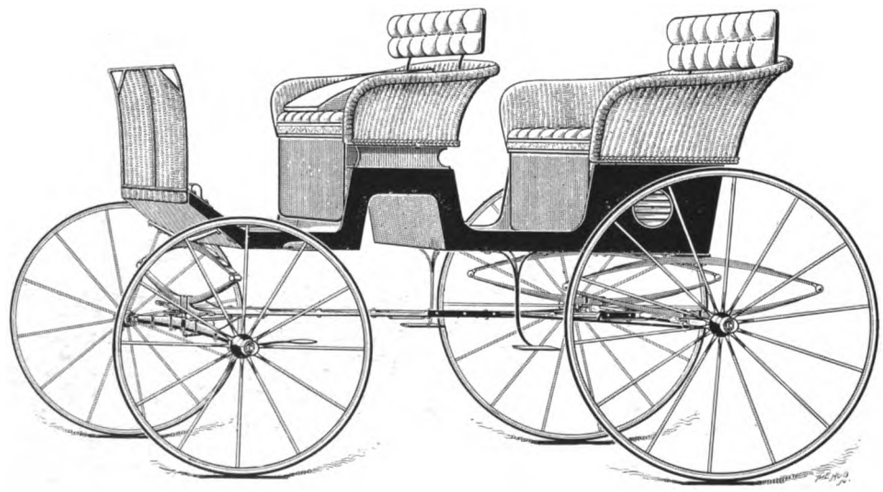


No. 522. Canopied Road Wagon.

SCALE, ½ INCH TO THE FOOT.

See description under "Latest Styles."

(Electrotype, $1.50.)



No. 523. Basket Surrey.

SCALE, ½ INCH TO THE FOOT.

See description under "Latest Styles."

(Electrotype, $1.50.)

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Plate CLXIV.

Roadster and Bike Wagon.

See description under "Latest Styles."

(Electrotype, $2.00.)



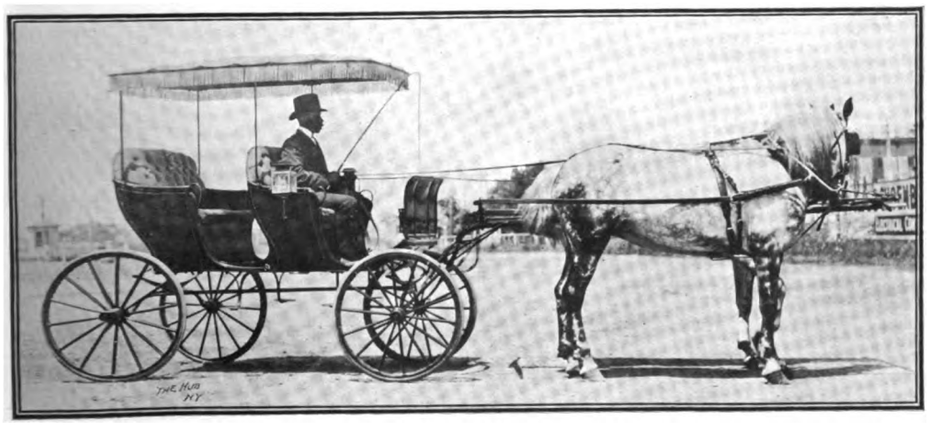


Plate CLXV.

Canopy Top Surrey.

See description under "Latest Styles."

(Electrotype, $2.00.)

Plate CLXVI.

Four-in-hand Drag.

See description under "Latest Styles."

(Electrotype, $2.00.)



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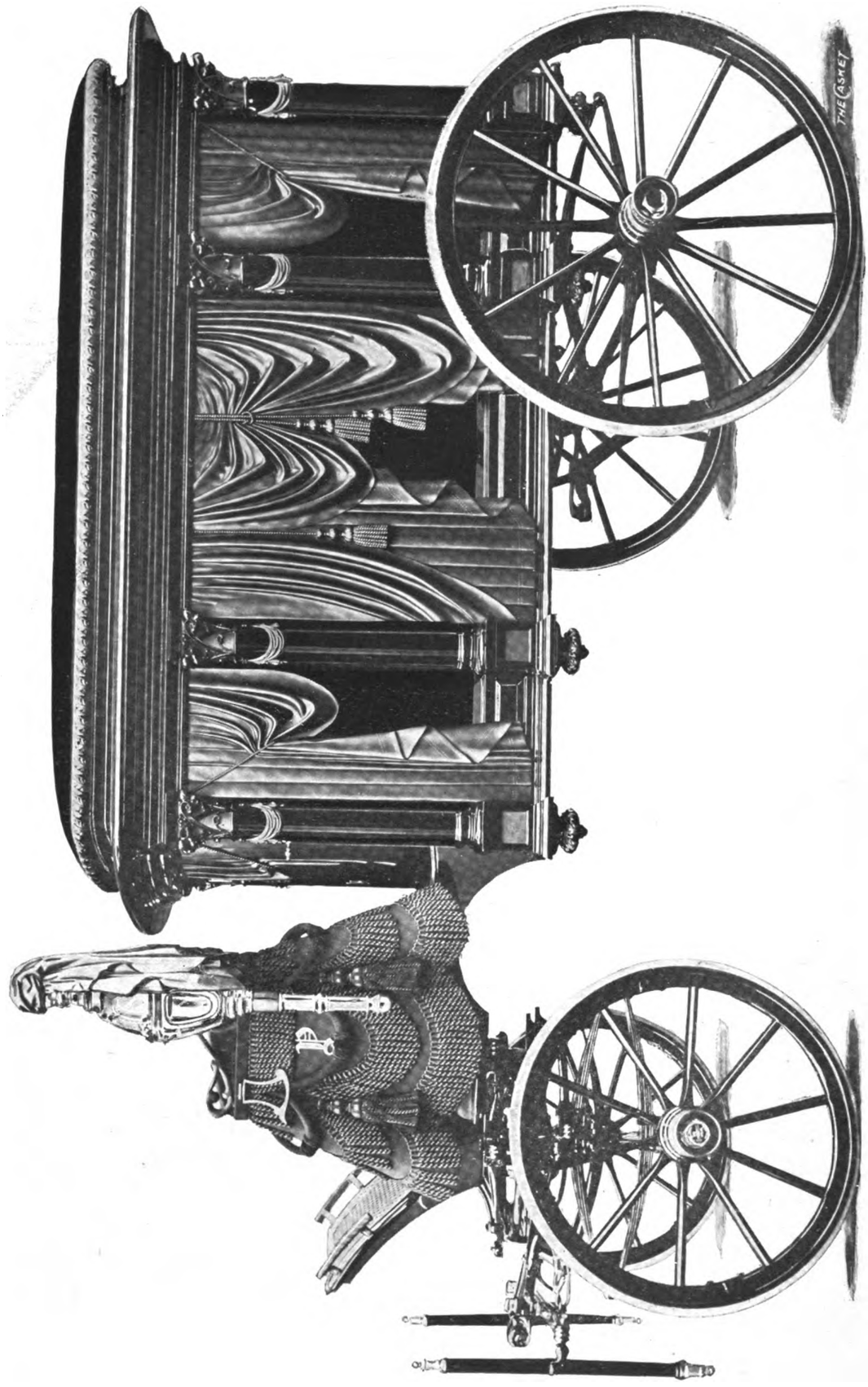


Plate CLXVII.

"Templar" Funeral Car.

(See description under "Latest Styles," also "Pan-American Exposition.")

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Plate CLXVIII.

Exhibit of Walborn and Riker at the Pan-American Exposition.

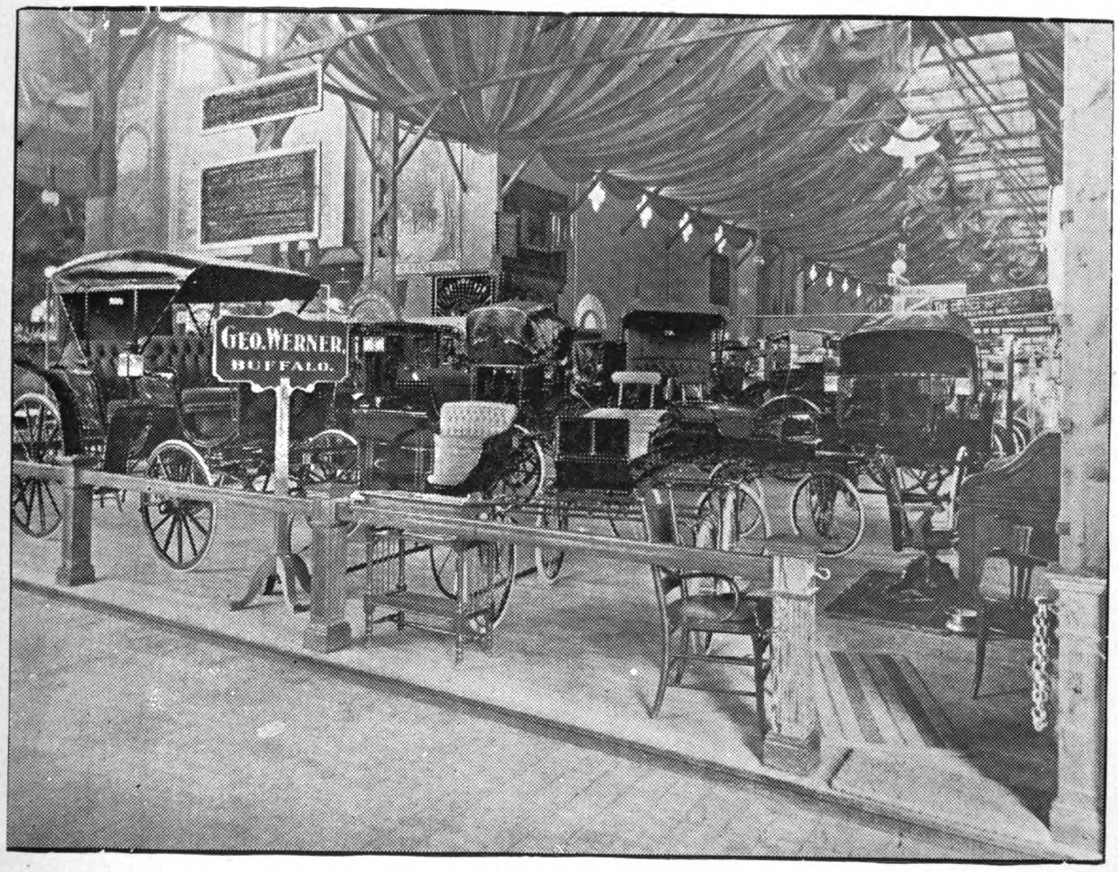


Plate CLXIX.

Exhibit of George Werner at the Pan-American Exposition.

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Plate CLXX.

Basket Seat Trap.

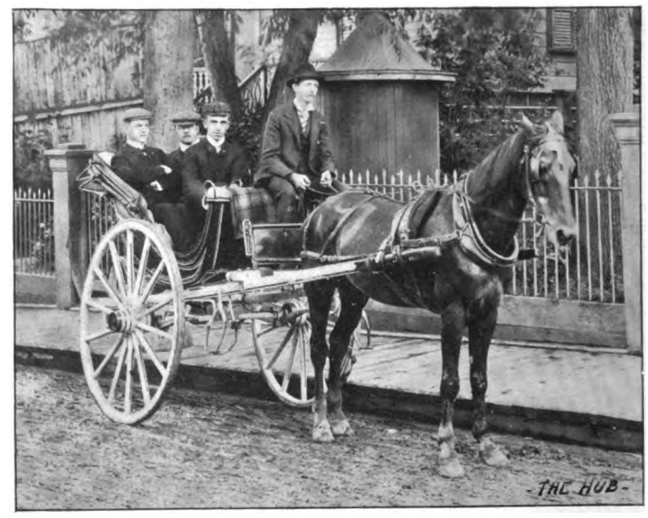
(Electrotype, $2.00.)

Plate CLXXI.

Caleche. Quebec Hack.

See description under "Latest Styles."

(Electrotype, $2.00.)



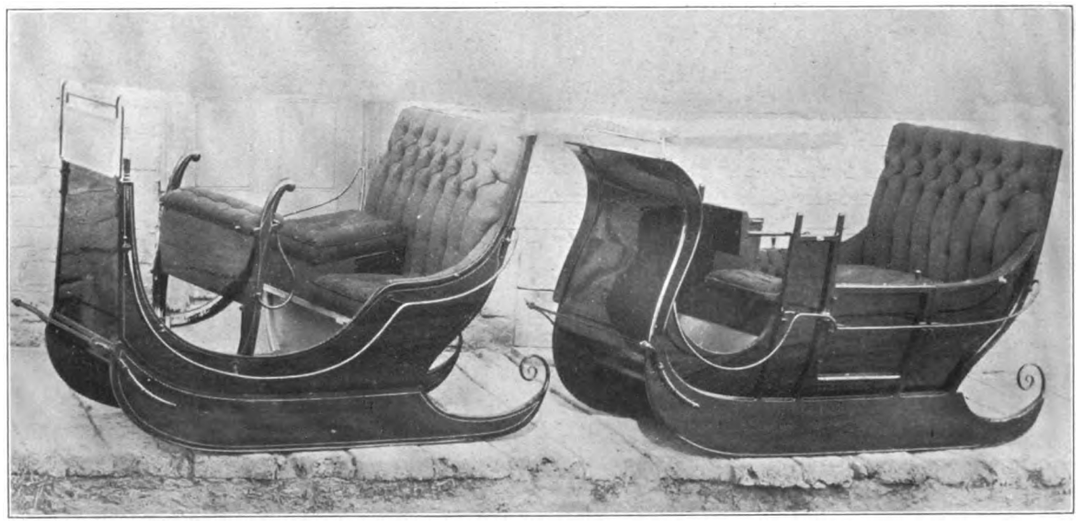


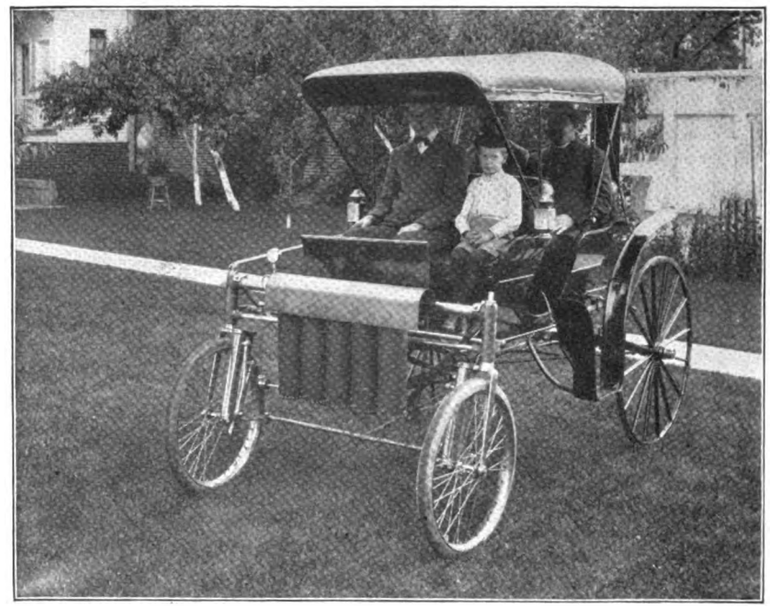
Plate CLXXII.

Canadian Sleighs.

See description under "Latest Styles."

(Electrotype, $2.50.)

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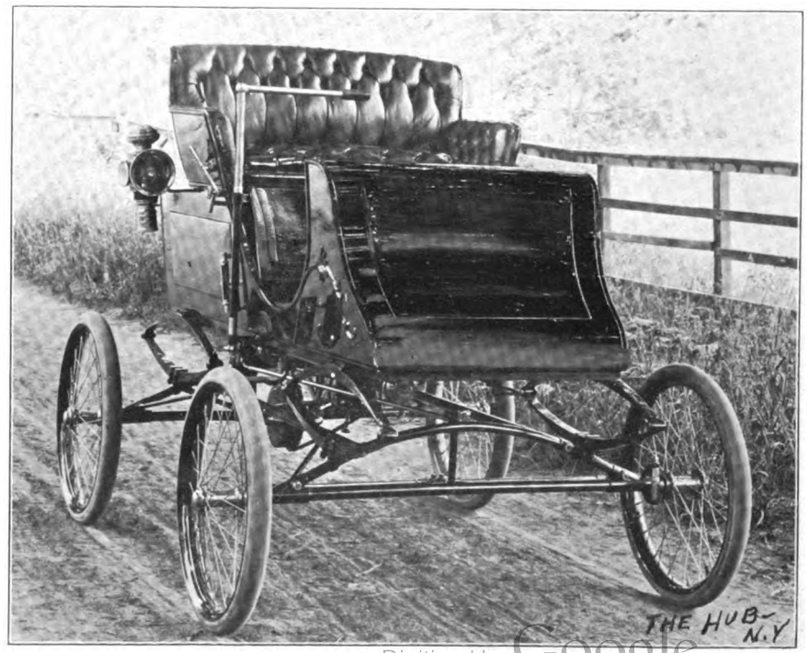


The Tractobile.

For description, see "Automobile Department."



Electric Vehicle Co.'s Exhibit at the Pan-American Exposition.



Prescott Automobile.

For description, see "Automobile Department."

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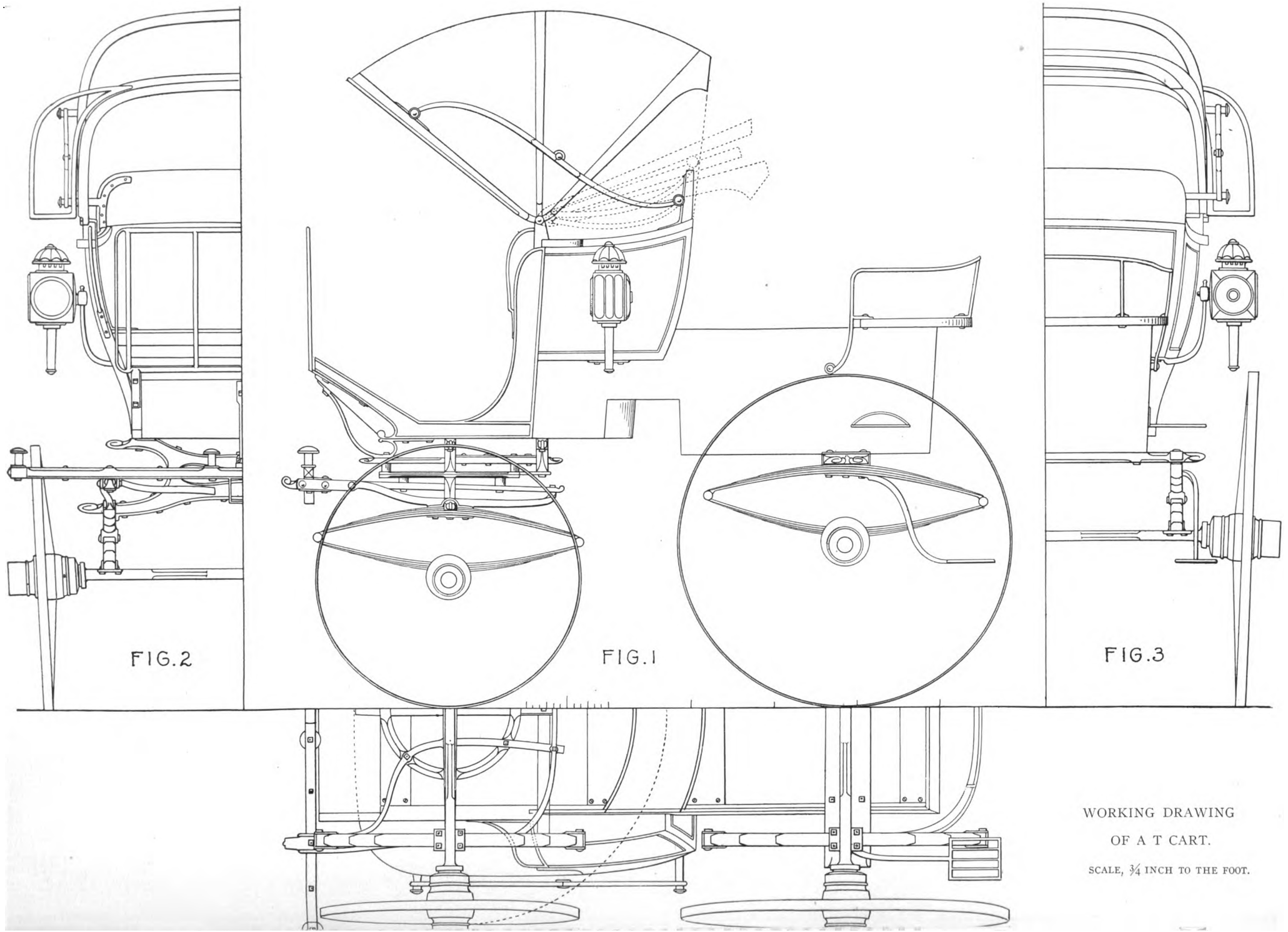


FIG. 2

FIG. 1

FIG. 3

WORKING DRAWING

OF A T CART.

SCALE, ¾ INCH TO THE FOOT.

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CARRIAGE TECHNICAL DEPARTMENT.

Comprising the Wood, Smith, Paint and Trimming Shops.

WORKING DRAWING OF A T-CART.

Scale, ¾ in. to the foot.

Our drawing this month shows a new design for a T-cart, one that is pleasing in its poise and proportions, and the projections in the finished carriage will produce a good impression, especially when hooked to a span of fine high horses. We have drawn the carriage as it will appear unweighted; consequently it is some two inches higher than it will be when the riders and the pole is in place; then the body will settle so that the top of the front wheel will be a trifle below the top of the line of the rocker. It should not be above it at any time. We also show a high dash and a high back; also considerable pitch or slant is given to the bows when folded back, as dotted in on Fig. 1. The high seat shortens up the bows, and aids to produce a massive effect when up, and reduces the quantity of leather and cloth in the folded position, and avoids a tall, slender appearance when up. The seat and top together are in height what its length is from front to back bow; that is to say, that if we enclose the top and seat within four straight lines at right angles to each other every line will be the same length, 52 in. This is applicable in this and in other designs, but is nowise a rule to be strictly adhered to. The seat bottoms are of the same height from the ground up; the top rail of the body runs through to the front of the cushion, onto which is fixed the seat frame. The bottom of both seats are caned in for two cushions, which gives a neat appearance. The front seat frame is made to be taken out for convenience in dusting out the linings. The wheel base upon the side equal to the track of 4 ft. 10½ in., so as to work the horses between the front wheels instead of directly in front of the tire, which interferes with the stride and prevents a short trace. In this way the distance between the ground points of the four wheels is equal each way. We first draw and locate the front wheel in both side and front elevations, and then in plan, and strike the trace of the outside of the top of tire, and guided by this, determine the dimensions of the cutunder for the passage of the wheel, which is the center of the base of the lower outline of the body. We have also carried the wheel house panels across the bottom parallel to the trace of the locked wheel, which gives an opening of only 7 inch., while the real size of the cut is 6 by 11 in. By doing this we obtain for our design a different appearance than those of the so-called regular standard types of Stanhope phaetons to be seen everywhere, all having the same general lines, and the same general character of outline, producing the same general effect, without in the least expressing any degree of variety of taste or an inclination to break the monotony of a century's duration, which cannot be accomplished with the round corner seat. In the drawing, Fig. 1, we place the bottom line of the outside of the seat several inches below the top line of the box, which shortens the appearance of the 28 in. stanhope pillar, the surface of which at the belt is 4 in. wide. We do this to increase the depths of the rocker 3 in., and this obtains symmetrical proportion. Turning the pillar away from the rocker, with a long slanted curve, forming a continuous sweep to the elbow, and in connection with the corner pillar enclosing with the fluted mouldings a swelled panel of good poise; in fact, it is the contour of this seat which dominates the expression of this design as a whole. We do not mean to say or to intimate that the effect derived is altogether confined to the seat, or to the body, but as a part it is in this instance, owing to its commanding position, the most noticeable, and is the key to the situation, so to speak. In placing the rear the top line of the box is cut in two, as we continue the seat rail down to a point several inches below the frame, and turn it to form a handle with the end bolted to the body. A strainer on the inside of the panel takes the bolt. This looks as though someone is trying to make a change for the better, and it is an improvement, since it insures to the eye a strong support to the seat frame, and it is a support, but it is not according to the conventional ideas of our leading draughtsmen; a conventional form it has not. They say it has not been introduced in regular form through regular channels by way, for instance, of the Atlantic Ocean. The corner of this seat frame is round, so that the entrance to the seat may be had more conveniently by means of the two steps. The first turned from the bottom of the upper half of elliptic to the gridiron tread; the other at the top, which is bolted to the body. The entrance to the front seat is had by means of the front wheel, if we first cover the point band with a corrugated rubber ring or sleeve, using white rubber for this purpose, and cement it on to a point band, the surface of which has been ragged or corrugated to prevent the rubber band from slipping. It will afford a safe and convenient step.

The line of rocker to take the crossbar of the rear spring is dropped below that of the boot. The best that we can do is a 48 in. rear wheel, with 10½ in. spring and 1¼ in. bar. At the front we use a 38 in. wheel, 9 in. spring, and 10 in. height of gear, and when these dimensions are skillfully drawn you have an artistic effect which contrasts strongly with the work of a novice. It is the dimensions of each particular part that gives character to the finished carriage, as it does to the scale drawing. The relationship existing between the miniature drawing and the finished carriage is very close, provided that both are constructed by the same mind, and if we can succeed in obtaining the desired effect of contour in the scale drawing there will be no trouble in maintaining this same poise in the finished carriage. For instance, suppose that it should be decided to set the rear seat about 2½ in. further ahead, would the position of the hind wheel, spring and axle be improved in appearance? would they take on a different look? Certainly not. It is the small details which a master draughtsmen controls and handles with a skill that stamps his work of fine quality. We call attention to these small items in the career of a carriage draughtsman to encourage and instruct him in the importance of small details which go to make up his work to a smart design; one that is better in every way and in any carriage than a dull looking design. We have not reached out beyond the conservative line of practical possibilities; no radical idea has been allowed to creep in, and thus invite criticism.

The dimensions for this carriage are about the same in all shops; little difference is made if we keep in touch with the prevailing styles. Length of carriage over all is 8 ft. 10 in.; height, 8 ft. 4 in.; width, 68 in., or 5 ft. 8 in. Track, 4 feet 10½ in.; wheel base, 4 ft. 10½ in. Height of body, 33 in., not including the lazy back. Length of body, 7 ft. 6 in.; width on bottom, 30 in.; across top of pillars, 46 in.; turnunder of stanhope pillar, 7 in. Length of top 52 in.; height, 3 ft. 10 in. to top of middle bow; front and back bows of the same length. Size of front seat, 38 by 22 by 18 in.; size of rear seat, 36 by 16 by 1⅛ in.; depth of box, 18 in. at the back, and 15½ in. at the front; floors level with the top of the rockers. Height of wheels, 38 and 48 in., size of the hubs, 6 in. and 6½. by 8 in. long; number of spokes, 10 and 12; size of spokes, 1⅝ by 1⅛ in.; size of rim, 1¾ in. deep, dressed for 1½ in. tire; front spring, 40 in. long, 9 in. high, 1⅝ in. wide, 4 plates; rear spring, 42 in. long, 10½ in. high, 1⅝ in. wide, 4 plates; size of axles, 1¼ in., Collinge pattern, for 8 in. hubs; fifth wheel, double plate, 20 in. circle; 1⅜ by ⅝ in. swaged between bearings top and bottom.

Painting: Seat panel, ultramarine blue; stanhope pillar, a much lighter blue; toe bracket, light blue, striped an orange; size of stripe width of bead. Cutunder, yellow. Carriage, orange, striped black; size of line same as the stanhope pillar. Body, black.

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BUSINESS WAGON SHAFTS.

A CORRESPONDENT who has had trouble with heavy wagon shafts says:

"*Editor of* THE HUB: I have been building all sorts of business wagons for years, and while all the other parts 'pan out' all right, I seem to have none the best of luck with business wagon shafts. I have tried the double bar, the single bar, plated top and bottom and have added stays from the shafts to the shaft bar. No matter how much pains I take, my shafts, like all the others, gave out where the bar tenon goes into the shaft mortice. I feel quite sanguine that you will be able to help me and others out and give us a single bar shaft that will hold on at all times and free us from this one of the worst annoyances to the wagon builder."

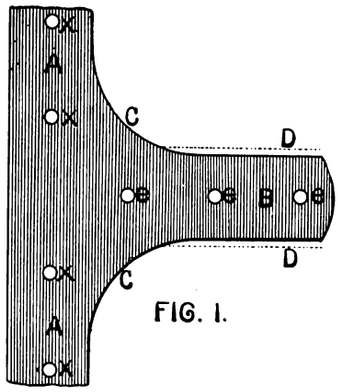


FIG. 1.

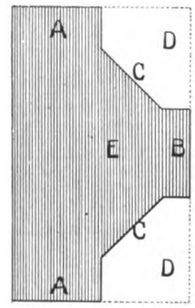


FIG. 2.

SHAFT IRONS.

Our correspondent no doubt has allowed the iron work of the same to be done in the regular way. Hole in the center of the mortise, narrow shaft irons, an insufficiency of bolts and improper fitting of the irons, and in all probability holes in shaft irons too large; so much so in the shaft bar section as to permit of a moving of the iron over the shafts turned to right or left when in use. The most serious fault, perhaps, an insufficiency of iron where the bar plate welds on to the shaft plate, which we know to be the fault in most cases. A very bad feature in shaft ironing, due in many instances to the ignorance of the smith and "don't know" and "don't care" qualifications of the builder.

Where the weakest spot lies in the wood work, when it comes to the smith shop, there must we put on the iron in sufficient quantity to equalize the strength. Not a great big or thick piece of iron, and at the same time narrow, but an iron wide enough, and thick enough, to give a sufficient working area at all points, more particularly at the bolt holes and at the junctures of bar and shaft. If we take pieces of iron one inch wide by three-fourths of an inch thick, flatten it out and swage it until it is one and three-quarters of an inch or two inches wide and seven-sixteenths of a foot thicker at center, we create a greater working area and consequently lessen the liability to fracture. This rule applies to all cases, not forgetting that the proper thickness exists.

In Fig. 1 we show front and back section in outline, A A; shaft plate, ball of the bar section of the iron, X; holes in the shaft section of the plate, E; holes in the bar section of the plate, C, a wide projection with concaved corners at the juncture of the shaft bar with the shaft. The dotted lines, D, are the lines of the shaft bars.

To produce this effect economically take what is known among plate iron workers as flange iron three-eighths of an inch thick, then proceed as per Fig. 2. Remove the pieces D, by cutting as per lines C. When the corner pieces are removed you get the desired form, A, A, front and back sections of the shaft plate; B, section of the bar plate beyond the section E, with swell on each side. Weld into A, A, the necessary amount for the regular plate and do the same with B to complete the bar plate. Leave the section or swell as per C, C, Fig. 1, at normal thickness, swaging the outside of the swell for shaft plates and bar plate. Make the swell on shaft plate over all not less than five inches and fully three inches on the bar. Never use less than three bolts in bar plate. Bolts as distributed in shaft plate and bar plate take none of the strength from bar and shaft at juncture and consequently give the required strength at the weak spots.

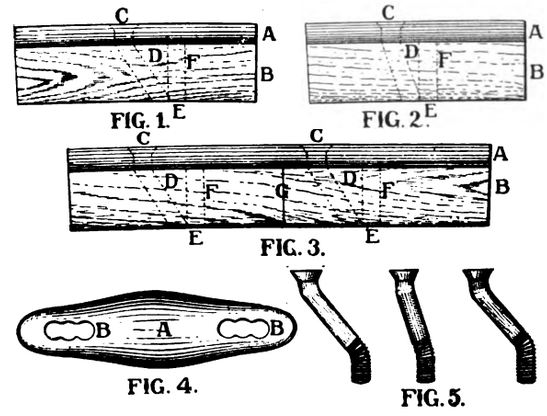
Do not be in a hurry to get rich. Gradual gains are the onlv natural gains.

RE-BOLTING OF TIRE TINES.

IF a practical thinking mechanic wants to have his nerves tested he should watch the working of the blacksmith, who works but don't think, when setting the tires on medium or light wheels, say those of a light business wagon.

He will see the wheels are taken off the axles, or each in its turn, and placed back up on a headless barrel. One of the workers will move along with the wrench, remove the bolts and nuts and let them drop to the earth. The other will follow up with hammer and punch, knock and push the bolts out and let them join the bolts on the floor. After all are removed they are swept together and laid on a board, the only real economical part of the whole operation, wheels and tines being marked usually with a heavy, coarse blunt cold chisel. The tines are removed, and in most cases cut and welded. No care is taken in relation to drafting and upsetting or cutting and welding so as to retain positions of holes in rims and tines. It makes no material difference when they measure the time whether it is nearly cold at the weld or at a red heat for from 6 inches to 10 inches. The draw or draft is all right. Some have an apology for a furnace for heating; the majority heat on the hearth. When the smith thinks the tine is hot enough, it goes on easy by "fits and jerks," or he "tugs and pulls." If it does not go first time, he pushes it into the fire again. If one wheel goes back ¼ inch and the other ahead all the way from ½ inch to 1¼ inches, it is all the same to them.

Now comes the horrifying process, the driving in of the tine bolts, etc. Fig. 1—A, the tine; B, rim; C, hole in tine; F, original hole in rim; E, outlet. Fig. 2—A, section of the tine; B, section of the rim; C, hole in the tine; F, original hole in rim; E, its outlet. Fig. 3—A, section of tine at joint of the rim: B, sections of the joint of the rim; C, hole in the tine for bolts for wheel plate; F, original



RE-BOLTING TIRES.

holes; E, outlet of same; C, joint of the rim. We will now attempt to explain what D, in each sketch, stands for. As before mentioned, C, the hole in the tine; F, original hole in the rim; E, the outlet. Now please look and see the distance and discrepancy between C and F, which is filled with the wood of the rim. Half a dozen burning irons, more or less, are thrust in the tine when hot. They are forced into the rim until the joint comes out at E. This process follows at every hole so long as not over one-half of an inch discrepancy exists. This action is what produces D, an extra amount of hole in the rim produced by the burning process.

The next process is to pick out four long bolts for plate bolts for each wheel, which are driven in, and the points thrown at right angles with the rim, with the same coarse cold chisel. If the bolts are too short they are backed out and cold pene drawn on the anvil horn and reinserted. If the holes in the wheel or rim plates do not get in just right, resort is had to punch and punch block. Fig. 4—A, wheel plate: B, the bolt holes as they are usually found to appear. Fig. 5 shows a group of three tine bolts, just as they are after being driven in the wheel or rim, and nuts screwed on to proper position. Just how effective such bolts are and their value as a securing agent, we leave the reader to infer. The value of a rim with a dozen or more spaces as per D, as explained, dos not require much manipulation of slate and pencil to determine.

It is quite safe to say that the time lost by the smith and his helper in welding the moving iron, backing out and driving in of bolts and setting ends up so as to take the nut and the putting on and

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fitting of nuts and plates, would buy a brace and bit and new tire bolts enough to do the job and then leave a good profit.

If a thorough mechanic had such a job given him, the bolts would have been knocked out and added to the wealth of the scrap heap. The tines would have been cut and welded or "upset" and wheel dropped with a view to dissipate discrepancy in holes. The wheel when done would have all looked nearly alike. All out of the way bolt holes would have been plugged with hard wood, and the ends have been filed off. The brace and bit would have been put into use, straight, clean holes would have been the result; new bolts would have taken the places of the old ones; the boss would have had his profit, and his customer full value of good work. And yet these same destroyers cannot see the value of trade journals, and still keep a wondering every day why their good customers keep falling off until the sheriff or constable sticks on a writ of attachment.

METAL WORKERS' SCHOOL IN SAXONY.

E. Theophilus Liefeld, United States Consul at Freiburg, writes: "An exhibit of the work done by pupils of the Metal Workers' School at Rosswein has been recently held in Freiburg, which showed the thoroughness of the instruction. The school has an average of sixty to seventy students. These pupils are chiefly from Prussia and Saxony, but all sections of Germany are represented, and even Sweden and Austria. One of the conditions of admission is that the pupil should have had three years' practical experience.

"Many of the states of Germany are liberally aiding the school and granting free scholarships to worthy young men.

"The school is provided with a technical library, reading and reference room, and has a large supply of scientific apparatus, electromotors, batteries, etc., and many practical models of buildings, machines, etc. Excursions are frequently made by the pupils to the large factories and mines of importance in the neighborhood. The course at the school lasts from one and one-half to two years and embraces four departments—building, fine arts, machines, and electrotechnics.

"A great deal of attention is given to drawing. The student is taught to create, and, in order to stimulate the inventive faculties, the German patent office sends the institution, free of charge, copies of patents pertaining to mechanical, metal, and electric apparatus.

"In addition to the special branches in metal work, etc., attention is also given to physics, chemistry, algebra, geometry, bookkeeping, and German language lessons.

The tuition fee for the semester, or half year, is 100 marks ($23.80) for citizens of the German Empire and 200 marks ($47.60) for foreigners, and an additional fee of 25 marks (for foreigners, 50 marks, or $11.90) for the use of apparatus, machines and material.

"The city of Rosswein has about 8,000 inhabitants and is situated on the main railroad line between Leipzig and Dresden."

COLORS FOR SLEIGHS.

Last season's sleighs showed a strong inclination toward light and bright colors. In our Eastern cities the sleighing season is short at the best, and the sleigh ride partakes each year more of the character of a gala occasion than a regular pleasure, and because of this, color effect is studied, and dull, heavy colors have given way very generally to bright tints, or light and bright combinations. Two shades of green or red. Where the greens are used, the darker shade is used on the body and the lighter on the running part, two shades of red being used for striping, the lightest being on the body and the darkest on the runners, the ironwork being plain black. Where reds are used, the same course is followed as to the disposition of the colors as with greens, but the reds are striped with black or white, faintly tinted with red. The use of two colors on the runners and body panels is one of the most striking of the innovations, although not new. The distribution of those colors varies in case of the running part. The wood knees are painted on the sides with the brightest color or shade, and on the backs and fronts with the foundation color. In other cases all the underside of the runners, including the iron work, will be painted the striping color, all other parts, the foundation color, and all bolt heads and outside iron work black. In some cases the dash panels are painted the striping color on the front and the foundation color on the back. In case of panel bodies the back panel may be painted the striping color, or the color used on the running part. In all cases, however, the full panel is thus painted, and in case of running parts the full underside of running part is painted the striping color, the object being to give as much solid surface as possible. This rule is broken only when the body is of a type calling for seat risers, side panel blinds or imitations. In these the diversion of colors is the same as breaks and other driving wheel vehicles.

Light driving sleighs of the Portland type will bear special treatment. The body panels pea green, and the running part pale willow green, striped with an ⅛ inch gold stripe, edged with a hair line of black on each side near to, but not against, the gold. Another is a Paris green body, pale vermilion running part, the striping on the body vermilion, and that on the running part black. If the body has a belt panel, that may be painted vermilion, but the use of any considerable body of red on the body other than on the belt is not advocated. A little more quiet, but an exceedingly attractive coloring, is to use amber brown on the body, and almost any of the rich reds on the running part, striping the body with a proper red to harmonize with the runners, edging with a fine line of black and striping the running part with twin lines of black. If the inner parts of the running part are painted a solid color that differs from that on the outside, the color should be the same as that used on the body. A faint pink white makes a pretty body color; the running part may be of the same shade, or light vermilion. If light all



CORNER ORNAMENTS.

knees may be finished with carmine on the front and rear sides, and all the beams, narrow dash panels and front and rear end panels of the body carmine; bolt heads, rivets, nuts, etc., black.

Heavy two, four and six passenger sleighs, with large panels, can be painted medium on light green, maroon, amber, carmine, London smoke, light wine color, or colors approximating these; the moldings, however, to be black. When bolt, S, or other narrow panels, form the top line of the body, these panels may be painted the same color as the running part. No color answers so well for the running part as red. Of these there are a great number of shades. Very little striping is allowed on heavy sleighs of the best class; monograms or crests are used on quarter and back panels.

The line of sleighs designated as "driving" may be painted in bright colors or even white. A deep panel drag body, with high seat risers, may be white, with carmine or light green trimmings and stripes; the running part to be bright vermilion or light green, or the body may be almost any bright red and the running part light red; all the iron work, seat risers, blinds or other panel ornaments inside of dash panels and plume parts, black.

An artistic painter, one that has a keen knowledge of colors, tones and combinations, can produce harmonious effects that are novel, rich and pleasing, without being gaudy, while one less artistic, but equally skillful, will be likely to use the same line of colors, and give gaudy and unpleasing results, and the sleigh manufacturer will best study his own interest by the employment of a foreman whose knowledge runs directly in the direction of colors and their harmonious combinations. Such a man is far more difficult to secure

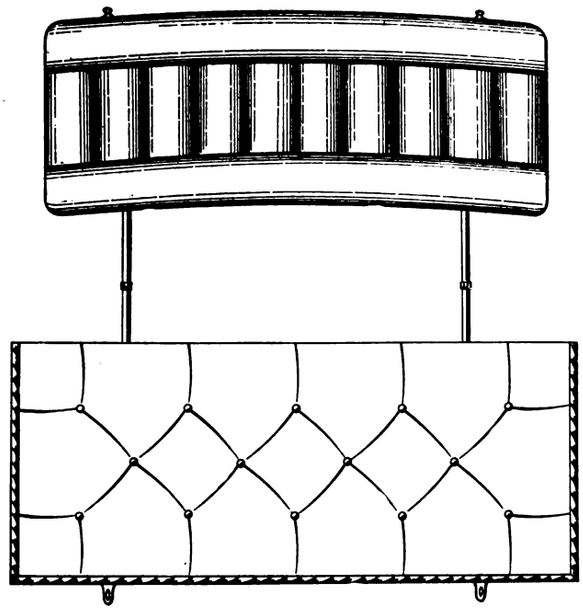
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than one who is an expert in the mechanical line. The latter can be hired, and when under the direction of him who is expert in colors, the best possible results can be attained.

The drift of the times is in the direction of bright colors, and we are likely to see many combinations that will be displeasing, particularly now that the variety of colors put upon the market is almost unlimited, giving the opportunity to a painter who is not an artist to torture art by a profuse distribution of colors.

TRIMMING A FOLDING SEAT TRAP.

THE accompanying illustrations show a neat design for trimming a folding seat trap. The design is appropriate for either cloth or leather in any color. Fig. 1 represents the style for trim-



FIGS. 1 AND 4. BACK AND CUSHION.

ming the back to the folding seat. Lay off the back in plain rolls of equal width. If the cross rolls are 3 in. or 3½ in. wide, the width of the inside rolls are to be the same. Fig. 2 explains the shape that the goods in which the long rolls are to be cut. The dotted lines on the sketch denote the sweep of the inner edge of the material. The

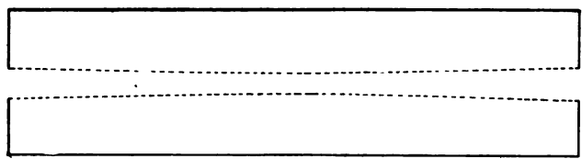


FIG. 2. DIAGRAM SHOWING SHAPE OF LONG ROLLS.

back before it is trimmed, as shown by Fig. 3. The broad lines on the back represent blocks between the irons; the narrow lines represent guide edgings, which are simply straight strips of thick straw board or thin wood. Tack the ends of the small rolls over the guide pieces. Similar pieces are used to press the edge of the long

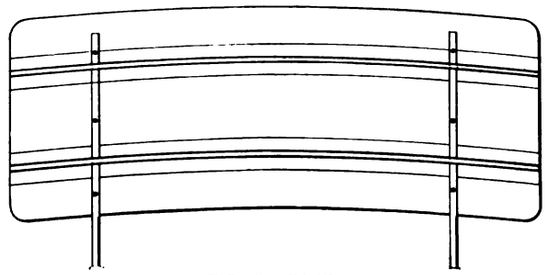


FIG. 3. BACK.

rolls against the guide pieces, so as to get a neat connection between the rolls without seaming lace.

The three sketches pertaining to the back are drawn so plain they explain the idea without much wording. Fig. 4 represents the cushion made fast to the turnover seat. Make up the cushion on straw board; give ⅝ in. fullness between the tufts each way, and enough around the edges to work them up full. Before making the cushion fast to the seat board lay wadding or hair on the seat board between the irons. Finish the cushion on the front and side edges with a flat welt on the top of the seat board, the back part on the edge of the seat.

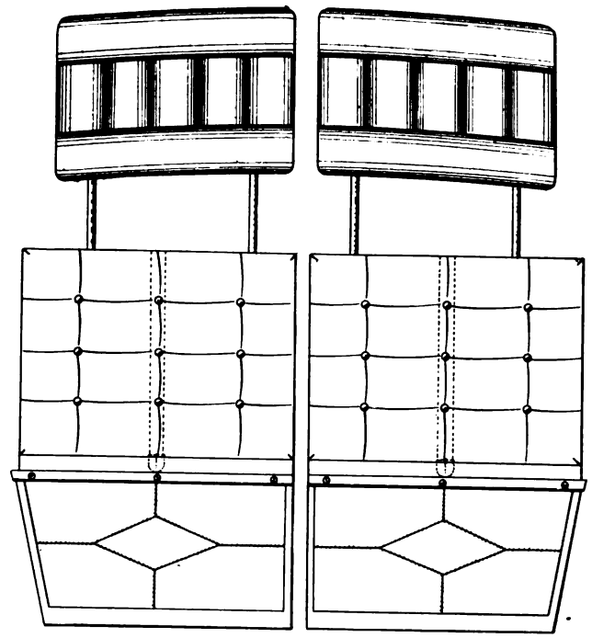


FIG. 5. BACKS, CUSHIONS AND FALLS.

The style of the backs, the cushions and the seat falls and the front seat are illustrated by Fig. 5.

Figs. 5 and 6 are a repetition of Figs. 1, 2 and 3. The manner of doing the work is the same in both cases. Make the cushion facings front narrow. The backing 1⅜ in. wide, and the back facings 2 in. wide. Lay off the tops of the cushions for three rows of tufts each

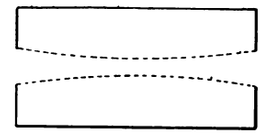


FIG. 6. DIAGRAM OF ROLLS.

way. The fullness between the tufts each way to be ⅝ in., and the same fullness around the edges. Make the seat falls stiff with a piece of thin canvas and one ply of buckram, well pasted together. Shape falls to extend from the seat front to the top of the rocker. Reinforce the bottom of the falls with a piece of top leather 1 in. wide, the sides of the falls with ¼ in. piece pasted neatly to the edge of the falls. Form the center diamonds of top leather.

After the reinforced pieces have been pasted on cover the face of the falls with thin sheet wadding. Cut away from the borders and the stitching lines. Cut the covers for the falls wide enough to take in the inside row of stitching. Apply paste over the reinforced pieces and along the stitching lines. Draw the cover over the falls in a loose manner and crease down along the stitching lines and paste over the edges. Finish the front of the seats with a covered oval molding, fastened to the front of the seat with three screws in each piece.

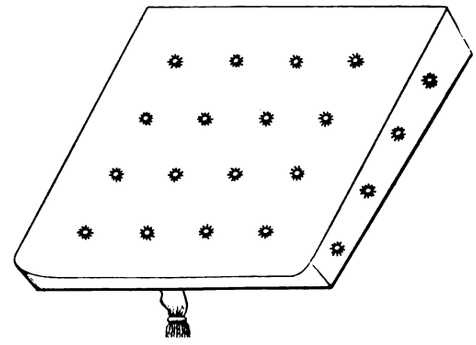


FIG. 7. DRIVING SEAT.

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Fig. 7 illustrates a plain design for a driving cushion for this class of work. The backing for the front facing to be 1½ in. wide at the miters, sloped out to ¾ in. Cut the backing for the back facing 3 in. wide; the flare back on the side facings 1 in. Lay off the top of the cushion for four rows of tufts each way. No fullness to be allowed between the tufts; the edges are to have ⅜ in. fullness. Most of the fullness to be rounded off at the corners. Make the tuft holes around the facings with a knob punch.

If the material is cloth, line the cushion top with muslin with wadding between. Leave the mouth of the cushion open on the back facing, and make a false top. The proper way to stuff the cushion is to draw twine through the four corners to form small loops. Tack the cushion to a frame made for the purpose with a loose board for the bottom of the cushion to rest on. The bottom of the cushion ought to be filled solid with moss or some other cheap filling. Particular attention ought to be paid to the filling of the back part of the cushion, for it requires to be made even firmer than any other part of the cushion. Fill the top carefully with hair. Care must be used in working up the edges and the corners of the top. Do not close the mouth of the top until all of the tufts are drawn in, which affords a chance to fill up loose places in the stuffing. When all of

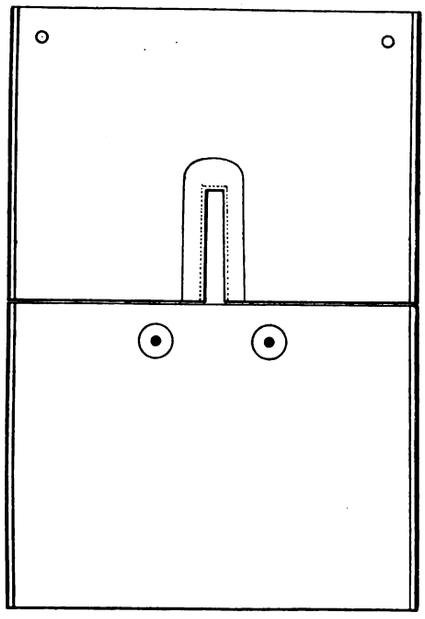


FIG. 8. FORM FOR CUTTING RUG CARPET.

the tufts have been drawn in replace the loose board under the cushion.

Fig. 8 furnishes an economical way to cut the rug carpet, that is, the two widths of the carpet for the length of the rug. Do not bind the selvage edges. Cut a slot in the front piece for the jump irons; reinforce the slot with top leather and stitch on the machine, as shown in the sketch. There are two fastenings at the upper corners. The back rug joins the front under the seat, and has two rubber circle patches fastened with copper rivets under the foot irons of the front seat. This makes a cheap and convenient rug for folding seat trap.

SURREY BACK.

FIG. 1 illustrates an ordinary tufted back suitable for most any open panel work, and is made up in the same manner as other backs designed for the same purpose. The part which is necessary to explain refers to the top portion of the back, which is covered with a separate piece designed to form a valance to protect the material, at the top of the back, from chafing and fraying out and the same to give a pretty finish to the top of the back. The idea is new and unique.

The valance is not fastened to the back except under the seaming and pasting laces, therefore does not interefere with the pressing of the back against the springs.

It is also economical. When the material the valance is covered with becomes worn and defaced, it is very easy to remove the valance and recover with old, or new cloth, to match the other part of the back. If a job in hand requires the backs repaired at the top, how much quicker and cheaper to repair the top of the backs with the valance, than to have to put a piece in under the upper tufts, which will be patch work at its best, with plenty of trouble and much expense.

The valance protector is made on a piece of duck canvas. When the top of the back has been worked up and a tack driven at each

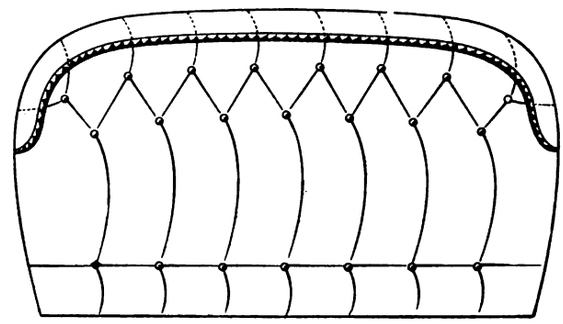


FIG. I. TUFTED BACK FOR SURREY.

plait the canvas must be drawn over the top of the back and around the corners as shown. Of course the two edges must be kept tight to the back.

Mark the outer edge of the back on the canvas, also the length of the valance down the side of the back; take the canvas to the bench and properly shape it out.

The width of the valance is regulated by the thickness of the top of the back; the width will be from 2½ in. to 3½ in. Lay a piece of thick wadding over the white surface of the canvas and baste it closely with a soft thread, using a short stitch underneath and a longer one on top. Care must be used not to draw or kink the canvas with the basting thread. Cut the wadding away from the edges, the inner edge for the binding and the outer edge for the seaming and pasting laces. Baste the cloth to cover the valance loosely to the inner edge, which has been bound with seaming lace without cord or cloth binding. Care must be used in the binding not to strain the edge of the canvas; it is better to pull in a little and keep the binding tight. Draw the valance over the back tight so that the edges will lay close. If there are any loose places under the valance they can easily be filled up before the spaces between the plaits are tacked down.

SPONGES BECOMING SCARCE.

"NEW YORK sponge dealers are wondering what is going to become of their business," declares the New York *Tribune*. "The supply of sponges is not increasing, while the demand is growing larger every year. Five years ago the price of sponges began to go up, and this season's quotations show a rise of nearly 100 per cent. over the prices of 1895 and 1896. Many varieties cost the buyers on the fishing grounds more to-day than they formerly sold for in local markets. A constantly increasing demand for sponges and a stationary yield has put prices to a point where wholesalers are at their wits' end to make a profit. The competition between buyers at the fishing grounds has become almost ruinous. Many dealers, especially in England, are introducing foreign substances into their sponges in order to make a greater profit. They use molasses and sand or salt to make them heavier, and press them into molds to give them better shape. There seems little prospect of developing new fishing grounds. The last sponge bed to be discovered was in British Honduras. An Englishman imported a score of Greek divers to that field about three years ago. Only two are now at work, as the sponges were of so low a grade that they could only be improved by expensive cultivation. The yield of 'sheepswool' or high-grade sponges in the Florida grounds has been steadily decreasing since 1895. In that year 231,000 pounds were marketed. Last year the total product weighed 181,000 pounds. The deficiency has been partly made up by an increase in the yield of 'grass' or third grade sponges of from 81,000 to 100,260 pounds."

IF idleness in man do not produce vice, it commonly produces melancholy.—*Shakespeare.*

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EIGHTH ANNUAL HORSE SHOW OF THE MONMOUTH COUNTY HORSE SHOW ASSOCIATION.

LONG BRANCH, JULY 25, 26 AND 27, 1901.

THE eighth annual Horse Show at Long Branch, like those that preceded it, proved a marked success in many ways. It brought together a fine line of carriage horses, and showed to an advantage some pleasing turnouts, the most noticeable being the small victorias and cabriolets, the latest production in this line of light



JUDGING FOUR-IN -HANDS.

pleasure carriages. THE HUB has secured some photographs of these new candidates for public favor, which will be published in future issues.

The attendance was large, fashion did its best in that direction and made a success, notwithstanding the weather was decidedly against them; rainy days do not invite out-of-door amusements. The closing day was the only one in which the clouds did not carry forebodings of rain, and as a result the grand stand and lawn were crowded with elegantly costumed ladies and their escorts.

The general character of the exhibits was good, but as usual at such places some one has a favorite animal, and vehicle, which no one else would admire and forthwith they enter it for a prize, or quite likely for the pleasure of seeing their name in print, and the class into which they have entered their turnout suffers thereby; but this is the result of a fancy and can be overlooked, but awarding prizes to old style vehicles simply because the teams happen to please the judges is a fault. That cannot be condemned too severely. If such decisions as some at Long Branch are to continue the offering of awards for the best turnout should be discontinued. Horse Shows have become so much a part of our amusements that there should be fixed standards that must be lived up to by exhibitors, and men should be among the judges who are qualified to determine the merits of the vehicle. There can be no excuse for the incompetency shown, for if a man is not qualified to judge vehicle and equipments, he should surrender that duty to some man who is. It is time that this matter was taken up in earnest if any encouragement is to be given to owners of the latest style of vehicles, harness, etc., to place their carriages in competition.

The total classes numbered forty-six. Of these thirty-eight were for horses in harness before vehicles of various specified and non-specified types, eleven of which were for horses, vehicles and equipments to count in the awards. This last class most interests the readers of THE HUB. In the order of classes these were as follows:

ROADSTERS.

To be shown in wagons at a walk, jog and trot. The horses entered in these classes will be judged as road horses that are driven regularly on the road. Their manners, style of going and conformation will be considered, not their pedigrees or records.

Class 3.—Best roadster and best appointed turnout. Horse to count 60 per cent.; wagon and appointments, 40 per cent. First prize, $50; second prize, $25.

There were seven entries in this class and those that entered the ring were fine specimens of the gentlemen's roadsters.

HARNESS HORSES.

Horses entered in these classes must be practically sound and have good manners; to be judged for their conformation, style and all-around action.

Class 11.—Single horse, any size, to be shown in a trap appropriate for a lady; and ladies to drive. Horses to count 60 per cent.; carriages and appointments, 40 per cent. First prize, $50; second prize, $25.

There were seven entries in this class, but it is evident from the various styles that were shown that there is a marked diversity as to what particular type of vehicle is "appropriate for a lady."

Class 12.—Pair of horses not exceeding 15.2 hands, to be shown in a carriage appropriate for a lady; and ladies to drive. Horses to count 60 per cent.; carriages and appointments, 40 per cent. First prize, $75; second prize, $35.

There were but two entries in this class.

Class 24.—Park team, the wheelers not under 15.1 hands. To be shown before a drag or coach. The horses should have quality, action and good manners. The horse to count 60 per cent. Drag and appointments, 40 per cent. First prize, $150; second prize, $75.

There were two competitors in this class, both of which showed standard types.

Class 35.—Offered by Messrs. Brewster & Co., in money or plate. For pair of horses to be shown before a demi mail, spider or stanhope phaeton for park use. Horses to count 30 per cent. and to be practically sound, with good manners; carriages, 30 per cent.; harness, 20 per cent.; servants' liveries, etc., 20 per cent. If in the opinion of the judges an exhibit is absolutely deficient in any one of the above qualifications, such exhibit shall not be considered. The entire exhibit must be the property of the exhibitor. Prize, $50.

There were five entries in this class and the turnouts appeared to meet the requirements as printed. There was, however, nothing that was particularly new.

Class 36.—Offered by Messrs. Fiss, Doerr & Carroll. For harness horse shown to a park gig. Horse to count 60 per cent.; manners and all-around action to be specially considered. Gig and appointments, 40 per cent. Horses that have won a first prize at any previous horse show, and horse dealers and professional drivers are barred. Prize, $50.

Six competitors entered for this prize. The vehicles were the regulation Tilbury.

Class 41.—Offered by a summer resident of West End. For the best pair of horses and best appointed victoria or cabriolet. Horses to count 60 per cent.; carriages and appointments, 40 per cent. Prize, $50.

There were but three entries in this class.

Class 43.—Offered by Edward F. Murphy. Horse not under 14.3 and not exceeding 15.2 hands. To be shown to a runabout. Horse to count 60 per cent.; runabout and appointments, 40 per cent. Prize, $50.

Class 44.—Single horses, suitable for station work, to be shown to appropriate four-wheeled carriages. Horse to count 60 per cent.; carriage and appointments, 40 per cent. Prize, $50.

The eight entries brought out a variety of vehicles, and was interesting in showing individual tastes in choice of vehicle.

Class 46.—For the best horse and best appointed lady's small victoria, horse not to exceed 15.2 hands. Horse to count 60 per cent.; victoria and appointments, 40 per cent. This prize in money or plate by Frank J. Gould. Prize, $100.

There were ten entries in this class, and it proved one of the most interesting in the show, as among the vehicles were some fine specimens of small victorias.

Class 47.—Single horse, any size, to be shown in a trap appropriate for a lady, and ladies to drive. Horse to count 60 per cent.; carriage and appointments, 40 per cent. To be owned and driven by amateur summer resident of Monmouth County, N. J. First prize, $50; second prize, $25.

This brought out a goodly number of competitors, but no man knows what was meant by a "trap appropriate for a lady." It was evident that "trap" in this case was a meaningless term so far as specifying a style of vehicle was concerned. If "trap" means any old thing then this class was well filled.

The term "trap" was freely used by the makers-up of the official catalogue, and without the slightest apparent idea of designating any kind of vehicle. The term at the best is but colloquialism and should be ignored in all such places as a Horse Show, being as it is a trade term that applies to a certain class of combination vehicles.

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PAN-AMERICAN EXPOSITION.

(Continued from page 210, August HUB.)

ADJOINING the last-mentioned exhibit is that of Cately & Ettling, of Cortland, N. Y. The top so familiar to all who visit the Carriage Builders' Association convention, with its top springs, is there, and Mrs. Ettling spends a portion of her time explaining its merits. When she is not able to be there her son does the honors of the occasion. This useful appliance needs no special description, as the readers of THE HUB are familiar with it, and wish the energetic proprietoress the success that her labor and the serviceable and valuable top spring so richly merit.

Fulton & Walker, of Philadelphia, Pa., exhibited an invalid carriage, which is a coupé-rockaway with an elongated back quarter of length sufficient to accommodate a stretcher of the regular ambulance size. The doors at the back open the whole rear end of the body, while the side doors, which are full panel glass sash doors, open to give access to the front for the attending physician. It is thoroughly equipped with every appliance necessary, and is undoubtedly a great improvement over old forms of the ambulance.

CARRIAGE MATERIALS.

The exhibits of carriage materials are not numerous, neither are they new or novel, but such as are shown merit commendation and must have a favorable impression upon such visitors as gave them attention. Prominent among these are the exhibits of rubber tires.

American Roller Bearing Company, of Boston, Mass., make a pleasing display of their celebrated bearings, which prove interesting to many who never before saw these bearings detached from shafts or wheels, while to the men familiar with them the display further confirms the good opinions formed.

The Grant Shaft Coupling Company, of Philadelphia, Pa., is the only one of the many companies manufacturing shaft couplings that have an exhibit. These couplings have won unqualified praise from all users, and their exhibit will, without doubt, tend to increase their use.

C. Cowles & Co. have a very handsome case made of oak, 6 ft. long, 42 inches high, and about 4 ft. on the top, on which rested various lines of mountings, including carriage lamps, handles and many silver plated specialties and trimmings, which they make for the fine trade. The exhibit as resting on the top of the cabinet is covered with a glass case about 16½ inches high, bevel plate-glass

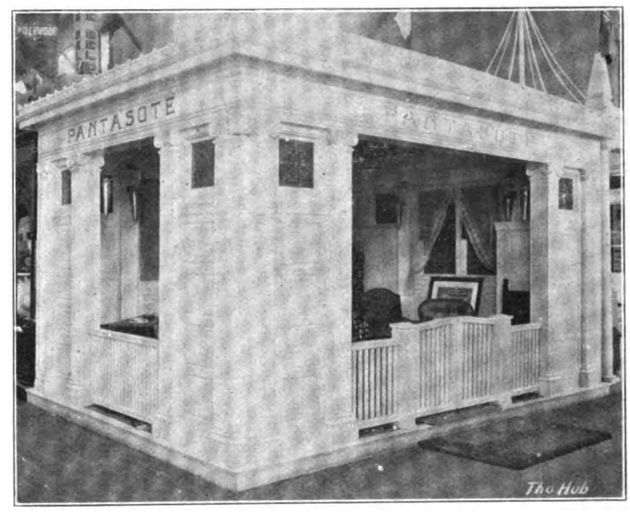


EXHIBIT OF C. COWLES & CO., NEW HAVEN, CONN.

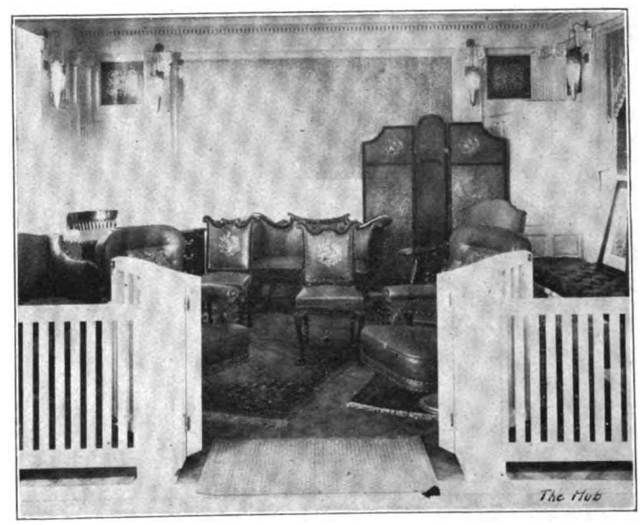
and on an angle of about 12 degrees. On the front and back of the case is carved very nicely the words "C. Cowles & Co., manufacturers of carriage hardware and trimmings, the largest manufacturers of carriage and coach lamps in the world." The pillars at the corners of the case are handsomely carved, and the whole exhibit rests on a platform 10 by 8 feet, 4 inches high, on which also rests a handsome brass railing, surrounding the entire case. They are the only exhibitors of carriage hardware and mountings, etc.

Russell, Birdsall & Ward Bolt & Nut Co., of Portchester, make a fine showing of bolts of all kinds and for all purposes. Much pains have been taken to make the exhibit attractive, and independent of the meritorious character of their goods they deserve special commendation for the artistic display. In the same enclosure is the exhibit of George Mertz's Sons—turned wood moldings, also turned metal moldings and spindles, a most attractive showing of turned goods.

The Pantasote Company, of New York, make a very attractive exhibit of Pantasote, one of the popular substitutes for leather. It



EXTERIOR VIEW OF THE PANTASOTE CO.'S EXHIBIT.



INTERIOR VIEW OF THE PANTASOTE CO.'S EXHIBIT.

is shown in a great variety of colors and in plain, pebble, straight grain and embossed finishes. The exhibit is a pleasing one and merits the attention of visitors.

Rubber tires are well presented by some of the standard companies, six companies being represented, their exhibits covering a large percentage of the various standard styles, together with some specialties. The presence of rubber tires on the numerous automobiles and pleasure horse-drawn carriages attest the value of this elastic appliance to the users of

The Boston Belting & Packing Co., of Boston, Mass., show a line of rubber goods, including their rubber tires. The special feature of these tires consists in placing an endless solid tire over the ordinary steel tire and holding it in place by the use of ring flanges placed

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against the face and back of the felloes and secured by double pointed wire tacks. The marked difference between these and other rubber tires causes them to attract special attention. It may be said that this is the oldest rubber manufacturing company in this country, having been founded in 1828, fifteen years before Goodyear discovered the art of vulcanizing rubber, and it may be well to say also that until Goodyear's success this nor any other rubber manufacturing company made rubber goods that possessed real value.

The New York Belting & Packing Co., of New York City, showed a line of their well-known long distance tires for carriages and

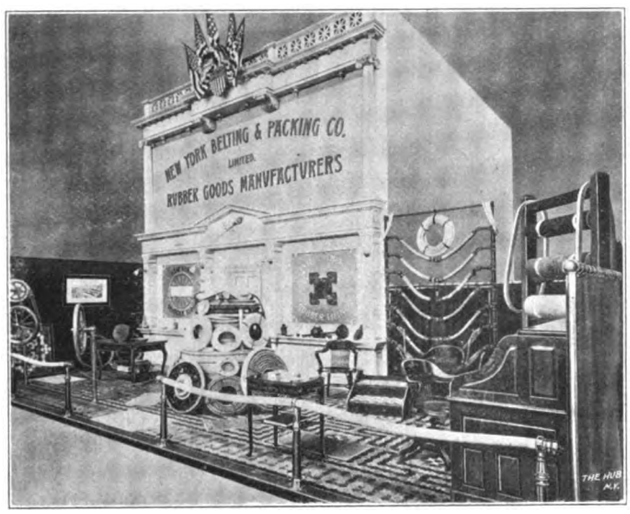


EXHIBIT OF THE NEW YORK BELTING & PACKING CO.

automobiles. These tires are designed for vehicles of all kinds and weights. This company manufacture but one kind of tire, a pneumatic, but it possesses rare merit, both for its inherent good qualities, due to construction and careful manufacture, while the combination of fabric and rubber is such that it is most difficult to puncture, and when punctured does not collapse to an extent to prevent its being used in that condition for a reasonable length of time. One of its advantages is the smallness of diameter of cross section, which gives it a symmetrical appearance even on light wheels. The exhibit is tastefully arranged, and the descriptive catalogues given out are gems in their line.

Pennsylvania Rubber Co., of Erie, Pa., exhibit a line of their rubber tires in sizes to accommodate all kinds of vehicles. These are solid rubber, with fabric base and secured by a steel ribbon instead of wires, the ribbon being of sufficient width to insure a wide grip that holds the tire firmly and does not cut. They also show the

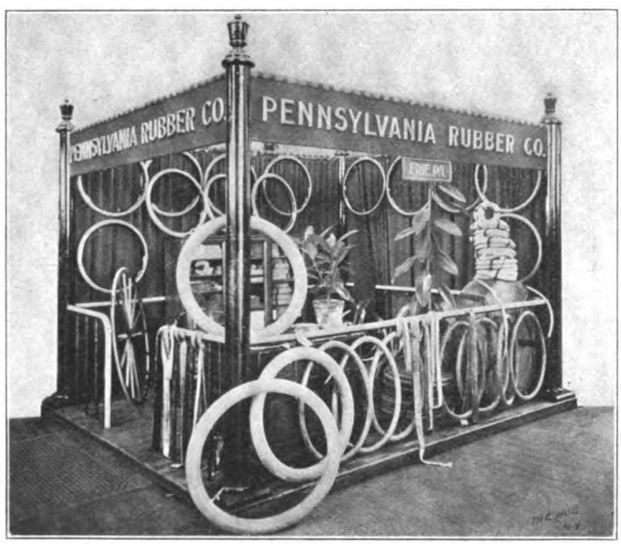


EXHIBIT OF THE PENNSYLVANIA RUBBER CO.

Dryden hoof pads. The form is one that thoroughly protects the frog, prevents slipping and overcomes the effects of concussion due to the foot coming in contact with hard road surfaces.

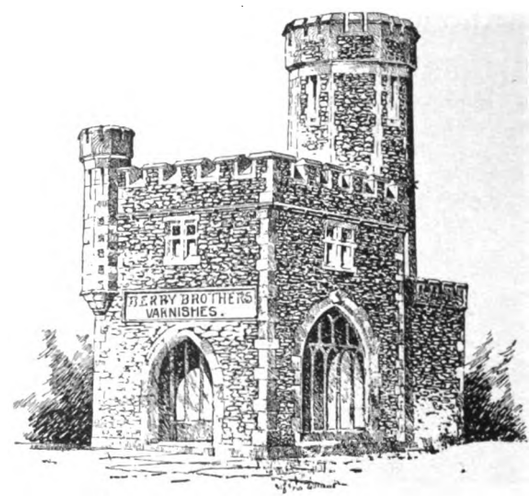
The Revere Rubber Co., of Boston, Mass., show the Longmuir patent solid tire. The feature of this tire is that it does not open at the joint, and consequently requires no compression. The rubber is of special form, and except when under pressure it does not bear upon the inside walls of the flanges. The goods are shown to an advantage. The company is a large manufacturer of rubber goods, among which is the air cushion rubber horseshoe pad, a pad which protects the feet by a cushion which entirely covers the sole of the foot, protecting the frog and counteracting the concussion due to treading on hard pavement.

The Diamond Rubber Co., of Akron, O. These exhibits contained almost every variety and size, from the lightest cushion tire for bicycles to the five-inch pneumatics for automobiles. The exhibit is made attractive by the artistic arrangement of tires and rubber belts, and served to show what a hold rubber tires have upon the carriage, and automobile industries as well as the bicycle, and one is in doubt which to admire the most, the small, neat solid rubber tires for carriage wheels or the great pneumatics for automobiles. No matter what of success others make, the Diamond Rubber Tire Co. has nothing to fear in the character of the goods shown or in the display.

The Goodyear Tire and Rubber Co., of Akron, O., have a line of bicycle, carriage and automobile tires, and other rubber goods, prominent among which is their rubber horseshoe pad. This company manufacture a line of single tube tires for bicycles, carriages and automobiles. They aim to supply every want in the tire line, and their goods evidence care in their manufacture and scientific construction. Like other tires, they have their special features, and with such well made goods they have no difficulty in interesting the user, no matter what the vehicle he applies them to. The exhibit does credit to the company and impresses the visitor by the evidences of careful preparation to meet the wants of all.

VARNISHES AND OILS.

Berry Brothers, Limited, have erected as a booth a miniature castle which they have named Castle Copal, a structure 14 by 22 feet on the floor and 32 feet high, having a wood frame with lumps of gum



"CASTLE COPAL."

copal of various sizes as a filling in making a unique and attractive building. The interior is finished with varnished wood panels, cans of varnish, fillers, etc., together with gums, are arranged to present a most pleasing appearance, and visitors are welcomed to seats within the castle and are treated to a dissertation on the merits of Berry Brothers' varnishes.

Bridgeport Wood Filling Co. have a very attractive covered booth, the interior of which is liberally provided with chairs upon which visitors are invited to rest: on the outside is a pile of rock crystal quartz, the foundation of the celebrated Wheeler wood filler, manufactured by the company, while inside is a quantity of the crushed and ground quartz, to a soft, fine powder, the condition which it is before mixing. Panels of a multitude kinds of wood filled with the "filler" in various colors, which brings out the grain and shows how completely the wood is filled. This is another of the attractive and instructive exhibits.

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MALLEABLE IRON, STEEL TUBING, MACHINERY AND FORGINGS.

Pratt & Letchworth, Buffalo, N. Y., have an attractive booth in Manufacturers' and Arts' Building, in which they show a line of their malleable castings for wheeled vehicles. These castings are specially clean and true, representing the perfection to which this company has brought malleable castings of every kind. The arrangements of the goods showed them to the best advantage, and is sufficiently attractive to arrest the attention of all visitors.

Shelby Steel Tube Co., of Cleveland, O., make a most attractive display of cold drawn steel tubing. The exhibit includes straight and bent tubes of various sizes and forms, arranged in an artistic manner to form the framework of the booth and to show the great range

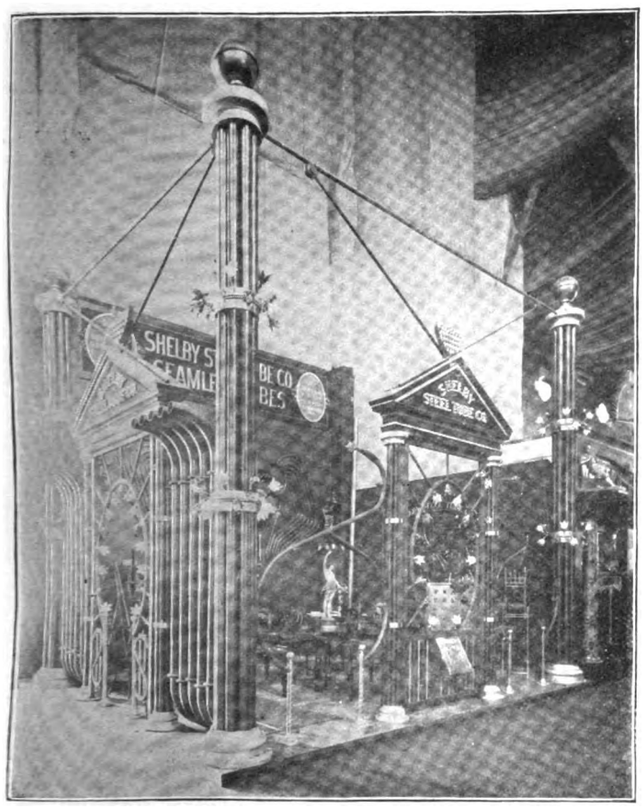


EXHIBIT OF THE SHELBY STEEL TUBE CO.

of work covered by this company, one of their specialties being tubing for automobiles and carriage gears. We gave a very general description of the product of this house in August HUB, and the accompanying illustration of their booth at the Pan-American exhibit serves as an object lesson to all interested in the manufacture of fine tubing, and we recommend our readers to call at the booth when they visit the exhibition and see for themselves what this great company is doing in the line of steel tubing.

The Ferracute Machine Co., of Bridgetown, N. J., make a very fine display of stamping machinery dies and products. The full line attracts much attention. This company was one of the successful American exhibitors at the Paris Exposition last year, and one is not surprised at their success after a look at what they have at the Pan-American.

H. B. Smith Machinery Co., of Smithville, N. J., is the only company showing a full line of woodworking machinery. Those shown by them are fine specimens of work and possess rare meritorious features. Their exhibit is a marked success.

The Norton Emery Wheel Co., of Worcester, Mass., show a fine variety of emery and corundum wheels and India oil stones together with grinding machinery.

The Hay-Budden Manufacturing Co., of Brooklyn, show a sample line of the celebrated Hay-Budden solid wrought anvils, an examination of which is merited by every blacksmith or iron worker. These anvils have no superior, and experience has proven that this solid wrought anvil has placed American made anvils in the first rank, and the Hay-Budden Company deserve the high reputation that they have earned throughout the world as manufacturers of anvils of the highest standard of excellence.

J. H. Williams & Co., of Brooklyn, N. Y., have on exhibition a very attractive line of drop forgings, among which is an exceptionally fine line of wrenches, and automobile gear forgings. The variety of

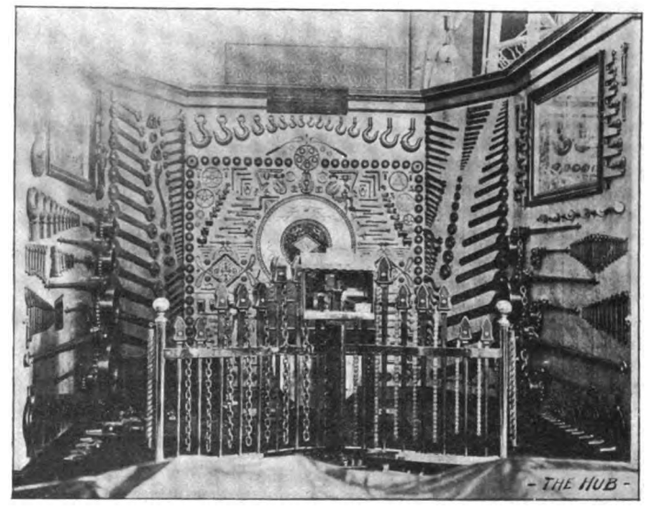


EXHIBIT OF J. H. WILLIAMS & CO.

goods is too great to mention specifically, but the smoothness of the forgings deserves special mention and will without doubt be considered by the judges when making their awards.

MACHINERY.

Cling Surface Mfg. Co., of Buffalo, N. Y., make an exhibit of their Cling surface belts or pulleys. An exhibit of this kind has little to attract attention until the real point is made known, but when the advantage of a cling surface belt is made manifest all interested in



EXHIBIT OF THE CLING-SURFACE MANUFACTURING CO.

machinery find the exhibit an educational one. The company show by actual use the difference in the driving power of their cling surface belt even when slack over one of the old kind tight, a thoroughly practical demonstration of the real value of their belt, which cannot fail to result to their advantage.

TOOLS.

E. C. Atkins & Co., of Indianapolis, Ind., deserve special mention for their exhibit of hand saws, back, whip and other saws used by carriage wood workmen; also hand and circular saws for woodworking machinery. They are giving out as a souvenir a handsomely illustrated and printed pamphlet in English and French, descriptive of their plant and its products.

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The Cleveland Twist Drill Co., of Cleveland, O., make one of their characteristically fine exhibits of their celebrated twist drills in sizes from the finest wire to the huge drill of several inches in diameter. The goods are of the highest grade and quality, and finished as finely as steel jewelry, making a most attractive exhibit of a most valuable tool.

An attractive exhibit is made by the Standard Tool Company of Cleveland, O., consisting of twist drills in great variety and size, milling cutters, reamers, taps and other tools, all showing a high degree of excellence in form and finish. This is a line that attracts all workers in wood and metal. The goods are richly cased and artistically arranged, making the display a pleasing one, even to the visitor who does not appreciate the great merit of the tools.

The Morse Twist Drill Co., of New Bedford, Mass., have an attractive exhibit of twist drills, reamers and other goods made by this house. The case is fitted up artistically and the various fine drills and reamers of different sizes and forms are so arranged as to show them to good advantage and in a manner to arrest the attention of the general visitor, as well as the man who finds twist drills and the company's other specialties of value in his business.

AUTOMOBILES.

The exhibit of automobiles is a large one, but the display owing to the arrangements is not as attractive as it should be. Some plants have large spaces, while others are cramped. Those having ample space show their vehicles to a good advantage with the exception of the largest dispay. This, owing to the great number shown, is cramped, notwithstanding the double decked booth, but as an offset the number of vehicles of different types gives a good idea of the growth and magnitude of the automobile industry.

The Automobile Company of America, of New York, makers of the "Gasmobile," show one of their racers and a business wagon.

This company is fortunate in having ample space, and as they show but two vehicles and a launch the visitor has an excellent opportunity to inspect their vehicles closely. They being of superior construction, will bear the closest scrutiny.

The Buffalo Electric Carriage Co., of Buffalo, N. Y., show two of their high type stanhope phaetons. In design, workmanship and finish these vehicles are unsurpassed by any shown; they are strictly high grade carriages. Their motive power is electricity and the success that has attended them speaks highly of this system as applied by this company. This is one of the few who report sales resulting from the exhibit.

The Conrad Motor Carriage Co., of Buffalo, N. Y., show the Conrad steam mobile complete with stanhope phaeton body, also gear and parts. The finished vehicles are attractive in form and finish and the workmanship on all the parts evidence care throughout every part. The steam engine and boiler are fine specimens of work, as are the gears which the company manufacture, ready for receiving the body, with wire wheels, wood wheels, with pneumatic and solid rubber tires. The exhibit is an attractive one in every particular.

The De Dion-Bouton Motorette Co., of Brooklyn, the American representatives of this great French company, have eight exhibits in charge of F. G. D. Wright, Jr., and R. B. Bramwell. These consist of New York type motorettes, doctor's motorette, doctor's brougham, delivery wagon, a bicycle, a quad, and a gear without body, showing all the working parts. The vehicles are neatly and attractively painted and trimmed, and displayed to a good advantage, showing various fittings for bodies. These are the highest representatives of the hydro carbon motors, a class that leads all others in France and includes the most powerful racers built. Small pamphlets, giving uses as well as records of these motors, are freely distributed.

The Electric Vehicle Co. have the largest number of vehicles and most complete in the varied assortment of styles of any single display made at any exposition in this country or abroad. In all there are thirty automobiles of the well known Columbia and Riker types in the company's enclosure in the Transportation Building.

The Columbia type consists of Victorias, phaetons, wagonettes, omnibuses, runabouts, a brougham, surrey, cabriolet, and delivery wagon, gasoline runabouts, and a bicycle carrier. The Riker type includes Victorias, phaetons, omnibuses, broughams, delivery wagon, break, truck and gasoline motorette. These are shown in a decked booth and the great number and variety impress the visitor with the growth of the automobile industry in the past few years in America. The company pay marked attention to the finish of their vehicles, holding them in the same class in this respect as high grade horse drawn pleasure carriages, and they have won well merited praise for the mechanical skill and genius displayed in designs and workmanship.

Grout Bros., Orange, Mass., exhibit four steam automobiles, consisting of stanhopes, business wagons and surreys. The merits of the motor and machinery were carefully looked after and no interested visitor left without possessing better knowledge of the steam mobile than when he entered the booth. The vehicles are finely finished and trimmed and the styles are pleasing. These features combined with the self evident perfect construction make the exhibit one that will be remembered. The space occupied was somewhat cramped, when the many interested visitors studied the good points of the Grout automobiles.

Haynes-Apperson Co., Kokomo, Ind., exhibit three vehicles representing their standard styles for two and four passengers. These are well constructed and of good design and have evidence of care in matters of details. They are well trimmed and painted, and receive favorable comment from visitors.

The Kidder Motor Vehicle Co., of New Haven, Conn., show two finished vehicles and one gear. Their light "runabout" is one of the most attractive vehicles of its class in the exhibition and receives much praise. It is to be regretted that the company's space is so restricted as to prevent showing the vehicles to a good advantage. These are steam propelled and as light as is consistent with strength.

The Knox Automobile Co., of Springfield, Mass., exhibit one of the Knox gasolene runabouts. The only three wheel automobile shown by it is a well built, neatly finished machine, and having a good position commands much attention, although apparently having no one to sound its praise.

Locomobile Co. of America, New York City, show ten locomobiles of their standard type. The stanhope bodies. These are finished in different colors—one in pure enamel, another mottled whitewood, and others in dark colors, the whole exhibit being a most attractive one. In all probability this is the best known of any steam propelled motors, and the name "Locomobile" is often generalized, and said to mean all kinds of automobiles instead of this one special kind. Their exhibit is a very attractive one.

The Milwaukee Automobile Co., of Milwaukee, Wis., show one of their steam motor vehicles. This make of automobile has received many favorable comments. The body is of the stanhope type, of pleasing design. The wheels are wire pneumatic. The gear is specially strong, being made of seamless steel tubing. This is one of the later contestants for public approval, and it appears to be able to hold its place among the best.

The Mobile Co. of America, Tarrytown, N. Y., are fortunate in having ample space in which to show seven of their celebrated mobiles, steam propelled autos. They are shown with and without top and are attractive in their painting and finish. Their small runabouts constitute the bulk of their exhibit, but they show in addition one dos-a-dos and one business wagon. Their exhibit is arranged in an attractive manner, and visitors are treated to a full and complete description of their construction and merits.

The Overman Automobile Co., of Chicopee, Mass., exhibit a finished vehicle and one in a skeleton frame showing working parts. The body has a steel frame and panels and is enameled (not painted), the finish being fine and durable. Their power is steam, produced by gasolene as fuel; the gasolene tank holds six gallons and the water tank twenty-seven gallons, giving power for a fifty to a sixty mile run. Their automatic water system secures an absolutely regular supply. The firing is done by wood alcohol. The exhaust is through the tubular frame of the gear. The engine is 4½ horse power.

Stearns Steam Carriage Co., of Syracuse, N. Y., exhibit Model B, dos-a-dos, and Model C, delivery wagon. These steam carriages compared well with any other automobiles on exhibition, being well proportioned and bearing evidences of careful construction. They are also well painted and trimmed. Access is easily had to the various parts of the engine and boiler, making them easy to repair and enabling the exhibitor to show all parts to an advantage. They are circulating a neatly printed and well illustrated pamphlet, showing the machines and giving full instructions in regard to care and operating.

Woods Motor Vehicle Co., of Chicago, have three of their styles of electric automobiles on exhibition. These are a top road wagon, a light square box vehicle, with wooden wheels, that is specially neat and attractive; a game dos-a-dos, amply roomy for four passengers, of a neat design, body painted olive green, gear carmine, trimmed

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with light color Bedford cord; and a stanhope phaeton, with rumble of neat design and finish, painted black, striped with one line of gold, trimming light drab cloth. These vehicles are a credit to the automobile industry.

The Eastman Automobile Co., of Cleveland, O., show one of the Eastman metallic bodies for automobiles. These bodies are constructed specially for automobiles and are so put up that the panel portion can be removed when putting the machinery in place. They are noiseless and cannot be injured by heat.

TECHNICAL SCHOOL EXHIBIT.

The technical school exhibit, although carefully prepared and a most excellent series of illustrations of work done by the pupils of the C. B. N. A., receives but little attention, owing to the manner in which the exhibit is fitted up. It, in common with a large line of exhibits from schools, etc., is placed into an upright case with a solid door. These exhibits are placed side by side in the various recesses of the department and one must look through the line until the desired exhibit is found, and then open the door to inspect the work. It is bad enough to have these educational exhibits cramped into small quarters, but when to this is added closed paneled doors, which few will venture to open, it creates a feeling that an injustice has been done the exhibitors. Not one visitor out of a hundred will feel at liberty to open the doors unless special attention has been directed toward some particular one, and those in attendance do not interest themselves enough to call the attention of visitors to the exhibits behind these doors, or to direct any of them to open them. In all probability the only persons who will open the doors of all or even a small portion of the exhibits will be the judges, and the fact of such exhibits being arranged will be a surprise to those who see the list of awards. Instructor Johnson took great pains in the selection of his exhibits and showing the course of training of the carriage class, but his work is kept from the public by the senseless use of closely paneled doors, which are always kept closed.

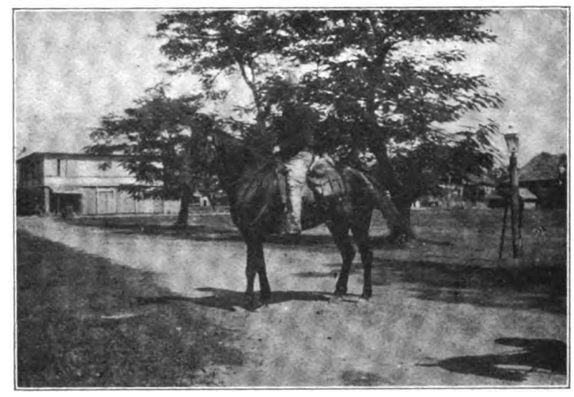
INDUSTRIAL OPPORTUNITIES IN THE PHILIPPINES.

CONCERNING THE ROADS IN THE ISLANDS.

AMERICANS or others who intend to invest money in business and general industrial enterprises in the Philippine Islands will find that the road transportation is one of the most serious questions to deal with. In every island of the Philippine group, particularly Luzon, Panay and Negroe, there are a great many towns and barrios so situated in the mountain districts for defensive purposes, that these places can be reached only with difficulty. The coast cities and town are readily accessible, as a rule, and at all times of the year, except perhaps during the worst part of the wet season in July and August. But some of the interior towns and many of the mountain barrios are entirely cut off from the main traffic during the wet months of the year, and in many cases this state of affairs exists simply for the want of a bridge at some important point or for means of fording a river or crossing by ferry. From the first part of November until late in June the roads in all parts of the islands are in fairly good condition so far as water and mud are concerned. The roadbed becomes very hard and dry under the heat of the sun, and there being no rain whatever cracks form in the sun-baked ground and these must be filled frequently in order to prevent accidents.

In the wet season all the low places in the roads turn to little ponds of water and mud, and traffic is exceedingly difficult. Last November the writer was with a wagon train of rations drawn by four miles to each team, and it was impossible to make but a few miles of headway in a day, whereas if the roads were in any sort of decent condition, ten to fifteen miles could be covered with ease. The wagons would sink down into the soft mud to their hubs about once in every hour, and then two or three teams would have to be doubled up in order to pull out the stalled wagon. In very many cases the trouble was due to the want of a little ballasting in a depression or simply to a matting of bamboo, a device quickly woven from split bamboo by the natives and thrown over the soft place in the road, the matting keeping the wheel from sinking in the soft mud. But teamsters have no time to prepare matting, and their only object is to push on, and let the next man struggle as he may.

An enterprising merchant on first landing on any of the islands of the Philippine group would naturally suppose that all he need do to open a business enterprise in the interior, would be to procure the stock of goods, have them landed on the wharf and then transported by ox or caribou team to the destination. A manufacturer coming to any of these islands with an outfit of machinery for the manufacture of cloth, flour, shoes, hats, or any other article of product, so much needed by the people at the present time, would find that he could get his plant on the wharfage at any place, but would have trouble in conveying the heavy machinery into the interior owing to the condition of most of the roads. The great trouble is that there is no system of road construction or care, and every one leaves it for the other to do. In some of the larger and richer places, and especially those controlled by the Americans, gangs of natives are now employed to care for the roads and open up new ones. Spain neglected the roads of the islands for years, and there are thousands of miles of roads in the islands which are not suitable for ordinary traffic. In many sections the only roads they have are such as result from constant use of trails. A depression in the road which causes outfit after outfit to get into trouble is permitted to go untouched. Places which any one could repair in good form in about two hours' work with the pick and shovel are allowed to go neglected month after month, even though the bad place in the road is opposite the houses occupied by the higher classes of natives. In such places as Manila and Iloilo, where the American troops have a great many prisoners in their possession the thoroughfares are in as good condition as in any American city, for the reason that from one hundred to two hundred prisoners are kept at work on the streets and roads constantly, but the smaller places have no such means for maintaining their roads, and often nothing is done toward making a repair, or toward opening up a new thoroughfare, until a serious disaster occurs, or until absolute necessity demands that something be done. The natives are peculiarly lazy in respect to roads, each evidently believing that it is the business of the other to do the work, with the result that it is not done at all. I have seen carcasses of dead animals lying in the roads near towns where the animal fell. No one will take the trouble to remove and bury the carcass except under extraordinary pressure.



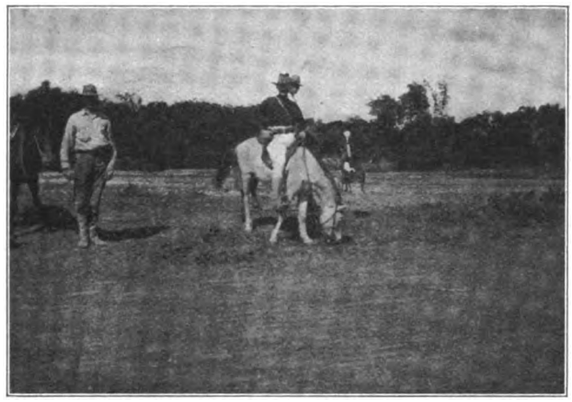
ROAD IN THE PHILIPPINES.

About one hundred years ago, when Spain was prosperous and was drawing millions of money from the revenues of the Philippines, a very large number of stone bridges were erected at all of the crossings of rivers and streams. It was about the same time that Spain began to invest immense sums of money in churches. Regardless of the size of the towns or barrios, Spain erected magnificent church edifices and fitted them up with all the modern devices of those times. A total of several hundred great, costly structures were built, and for years the source of income from these churches, through the priests and friars, was of very large proportions. Spain extorted high rates of payments for all deaths, births, marriage services, and other services held in these churches, and divided with the priests. The immense cargoes of gold and silver procured from the natives in this way were consumed by Spain for home expenses, but a certain part was set aside each year for the construction of the bridges, for Spain knew that it would be a paying investment to make the roads passable so that the natives could come into the towns on a Sunday or for special services, each of which meant a payment of gold or silver into the treasury of Spain. Therefore it was a wise and money-making scheme on the part of Spain to have the roads passable in those days. But in recent years the situation changed, and with the change came the withdrawal of moneys for the care and building of stone and

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other types of bridges for crossing rivers and streams. The bridges erected by Spain have been going to ruin for fifty years. Fifty years of neglect, decay and hard usage are enough to put even the best of bridges out of service, and consequently the manufacturer or merchant who intends to go into the interior with his plant of machinery or stock of goods, should base his calculations on the character of the rivers he must cross.

In many instances, where the bridges have gone to ruin for want of a little care, the streams are crossed by means of bamboo rafts made in the form of ferries for ferrying across teams, persons and freightage. But these rafts are made of slender stock and are exceedingly unreliable, often sinking under the weight on them, so that when the ferry is half way across the river, the wagon wheels are in water to the hubs and persons standing on the raft are to their knees in water. This is a critical moment, for if the mules or carabou take fright they will draw the load to the edge of the raft and perhaps swamp the whole thing. Possibly a better idea of the traffic and conditions of road travel in the Philippines will be obtained from an account of a recent trip the writer took with an army train of seven escort wagons, each with two mules, and the loads consisting of rations and commissary stores for a post situated in the interior of the Isle of Panay, about twenty miles from Iloilo.



ROAD IN THE PHILIPPINES.

It was in January, at a time when the roads are in fairly good condition, as regards firmness and dryness, but of course the ruined bridges, and defective places in the road beds were as bad as in the rainy season. We pulled out of Iloilo in the afternoon, for the heat is too strong to use the mules before three o'clock, the sun getting almost overhead at noon and sending down volumes of heat that seem to absorb all atmosphere and make everything hot and dry, while men and mules pant for breath. Towards four o'clock, however, the heat of the sun is broken and the air becomes nice and cool and travel is possible. At four o'clock we reached Molo, a town in the possession of the Americans, and the roads of which are in first class condition. Between Molo and Oton, however, the roads are very rough, and there were many places where the Insurgents had had trenches cut entirely across the roads so as to fight back the American advance and contest the ground foot by foot, for these trenches were made zig-zag fashion, one leading into another in the rear, so that the rebels could fire a volley, retreat to the next trench without getting out, and so on to the rear indefinitely. These trenches have never been completely covered, for money is scarce, and although there is an abundance of idle native labor, the shiftless Philippinos will not turn out in force for the purpose of putting the roads leading into their respective towns in shape. It is, therefore, left for each teamster to do a little towards repairing. If his team gets over, he does not of course stop to make any repairs, but if his team sinks into the trench work, or if he cannot get over a defect in the road, then the whole train is held and teamsters, guards and all take a hand in filling in excavations with earth and bamboo, so as to make it possible for the heavy wagons to pass. In this way the bad places in the roads are gradually repaired. Evidently the Americans will soon have in operation a system of road inspection and repair, which will greatly benefit traffic.

From Oton to Tigbaun I noticed that the country was almost completely filled in with people and there were absolutely no chances to purchase anything. There were certainly 40,000 people in sight in the towns, barrios and hamlets within a distance of eight miles and no stores of any kind. The men with the train had plenty of money, but could not purchase a sandwich or a glass of lemonade at any price. There are no stores for the sale of goods for wear, or anything. It is one complete void, except for people, and these exist everywhere. The result is that the people do nothing but lounge about, and there is not $1,000 in money in any locality containing 1,000 people. The strong men of the towns and hamlets must loaf all day, for there are no shoe factories, lumber mills or textile works of any sort, and the latter are particularly needed now that the population of the cities and towns are compelled to wear white duck suits. Millions of yards per month will be needed for many years to supply the demand for white suits resulting from the orders to put every male native, except children in coats and pants. If it were so that the young men of the towns could go to work at something besides fighting with the native army, money would come into the town regularly and then there could be regular expenditures made for the care and repair of roads. As it stands now there is no available fund for this service.

We arrived at the outskirts of Tigbaun about sundown and the river at this point is very deep, especially when the tide is in and the natives have long since permitted the bridge to go to pieces, although a little money and labor would fix it, and consequently the only way to get across is by means of the bamboo ferry used by the natives. Four natives work the ferry by means of ropes strung across from bank to bank. When the American column advanced on Ieon last November, the wagon trains had to cross by means of this crude and frail ferry and one of the teamsters did not take the trouble to unhitch his mules, and when in the center of the river, the raft began to go down, frightening the mules so that they jumped to one side, turning the raft almost over and dumping the team and all into deep water, where the mules were drowned, the wagon lost, but the men swam ashore. As we reached this place we unhitched each team of mules and all hands took hold of the shafts and wheels of the wagons and ran them on the raft, one at the time, and thereby gradually got them all over on the opposite shore without damage.

Some of the bridges of Spanish design have been replaced with flooring of bamboo poles, and logs of trees arranged parallel, which is one of the most dangerous ways to have a bridge. The light native carts can get over readily, but often the heavy wheels of the army wagon cause the logs to separate and then the wheels sink through.

After leaving the ferry we arrived at the barracks of the soldiers at Tigbaun in the evening and camped there over night, proceeding to our destination the next morning at daylight, for no heavy teaming can be done after ten o'clock in the morning without greatly straining the mules, as a result of the intense heat. Our next intersecting point was at a river about two hundred yards wide with no bridge, the former one having gone to ruin years since and only a few parts of the masonry remaining. The only way to cross was to ford the stream, which was done after an hour's hard work, for the opposite bank was steep and ropes had to be attached to the wagon poles and the men took hold altogether and aided in drawing the wagon up the bank to the level road. All this sort of thing causes delay and trouble, besides additional expense, for the teams must be loaded light. After leaving the river we reached some roads where the going was so rough that many things were almost shaken out of the wagons.

These are some of the difficulties with which merchants and manufacturers will have to contend with for some years to come in the Philippines. Still there are two sides to the question. The fact that traffic is bad makes it impossible for many persons to bring goods into the interior towns, and therefore competition is unknown. A party who succeeds in getting a stock of merchandise, some sugar machinery or the like through from the ports to the interior, can dispose of the same at his own figures, or turn the same to account in the most profitable way. I have seen bottles of sarsaparilla bought at five cents per bottle in Iloilo and sold for twenty-five cents in the interior and every bottle sold almost as soon as the merchant arrives. In fact, as soon as it is known that a wagon train is coming in, many start out to meet it so as to buy up what they can. Clothes, buttons, shoes, rubbers, stationery, etc., which come in are sold at fabulous prices immediately. A sugar machine, printing press, etc., is worth many times its original price by the time it reaches its destination. Thus, the roads are bad, and traffic costly and tedious, but the manufacturer and merchant get the money back two-fold, owing to absence of the competition which would naturally prevail if there were railroads for taking and delivering goods and machinery promptly at the desired points in the interior.

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NOTES BY A POPULAR SALESMAN.

Editor of THE HUB:

Dear Sir—I have been around among the "boys" considerably, and, as THE HUB is the "old original," I can't help telling you whom I saw and how the men of the East who handle wheeled vehicles are prospering. I saw them all, you can rely on that, for when I go out to make a round up I generally do it. I am from the West, you know, and am rather round myself—yes, all round. However, I don't want to talk of myself, but of the very good men I met in my travels in behalf of the terrestrial advance of the human race, and here I give a few particulars about a few of them.

The Adams & Keeler Livery, Ridgefield, Conn., is conducted by Messrs. J. H. Adams and W. R. Keeler, gentlemen of the highest repute in their community and the surrounding country. They have two fine stables, and in connection with their livery business carry a select assortment of vehicles, harness and horses, which they sell on equitable and easy terms. They have always in stock the latest and most desirable styles of everything modern that goes on wheels.

At Christiana, Delaware, are located A. G. Weber & Bro., who are proprietors of a general supply depot. They handle a generous assortment of modern built and stylish vehicles, obtained direct from the principal factories of the country.

W. Harman Reynolds, "The Sunshine Man" of Townsend, Delaware, carries a nice choice of carriages, buggies, wagons, etc., which he buys for cash direct from the manufacturers. Mr. Reynolds keeps nothing that is not the best of its kind and guarantees every vehicle he sells to be just as represented. Mr. Reynolds is all right, all the time and every time.

J. F. McWhorton & Son are among the largest dealers in carriages and agricultural implements in Middletown, Del. Father and son, though genial, whole-souled men, are strictly business, and you can rely implicitly on a square deal when you transact business with them. They handle only the product of high grade goods and buy direct.

Jas. King & Co. (Jas. King and C. E. Hosbach), famous among the famous carriage men of Baltimore, Md., carry the largest stock of fine and medium class vehicles in that State. There is but little on wheels that cannot be found in their assortment, and they challenge competition from any source. That they are meeting with the success they so richly merit is evidenced by the fact that they have just erected one of the handsomest repositories in the United States. It is a three story building, plate glass front, 50 by 175 feet in area and furnished throughout with every modern improvement. They carry a full line of vehicles, from a farm wagon to the most elegant equipage, from a speeding wagon to a child's cart. They manufacture and repair to order and also show a full line of desirable goods from the celebrated workshops of H. A. Moyer, Keystone Wagon Co., Columbus Buggy Co., Cortland Wagon Co., Richland Vehicle Co., and others of equal reputation. Mr. Schmidt, the manager and buyer for the firm, is an estimable and genial gentleman, a general favorite and very popular.

Geo. P. Lawton, proprietor of one of the best conducted livery, sale and boarding stables and carriage repositories in Newport, R. I., is one of the oldest and most respected citizens of that place. He is a self-made man, brought up to the business from boyhood and the best judge of a horse and connoisseur in fine carriages in all Rhode Island. He caters to a first class trade and enjoys the implicit confidence of all who know or have ever had dealings with him. His son Harry, a genuine chip of the old block, assists his father as general manager and contributes much to the increase of business.

Messrs. Taveniere & Johnson, a firm of State repute and favorably known to all carriage men in the United States, run an A1 livery, sale and exchange stable in Gloster, N. J., and are dealers in vehicles of all kinds, making a specialty of first class goods in all lines of the trade. They buy liberally and most intelligently for spot cash, and therefore can sell at popular prices. In all my peregrinations during the many years I have been engaged in the carriage business I have never met a more reliable firm, or men more thoroughly posted.

Rozell Harris, of Hackensack, N. J., has had over twenty years' experience in handling carriages, light business wagons and bicycles. Mr. Harris always knows "where he is at," and so do all the people in Hackensack and for miles around who wish to buy a first class vehicle for any purpose. He has a large established trade and deserves all the prosperity that rewards his efforts to please.

At Woodbridge, N. J., is located David P. Carpenter, a practical and skilled manufacturer of fine carriages, who also does painting, trimming and jobbing in all branches. A judiciously selected assortment of up-to-date vehicles of all descriptions, from the most reliable makers in the country, constantly on hand. Mr. Carpenter fills all orders promptly and guarantees entire satisfaction in every instance.

Hugh Mullen's livery stable and storage house are just opposite the D. L. & W. railroad depot, in Montclair, N. J. Mr. Mullen is one of the noble army of self-made men, who have done so much to promote the best interests of this glorious country. He gives his close, personal supervision to all branches of his business, is a capital judge of everything on wheels, a shrewd buyer and an affable, accommodating and successful salesman.

A most complete and fine appointed livery and boarding stable is that of the J. K. Ackerman Co., in Paterson, N. J. The members of the company are J. H. Ackerman, president and treasurer; H. K. Logan, buyer and manager, and T. Houston, salesman. Their establishment is known far and wide as the "Reliable Horse Exchange." The Ackerman Co. are extensive dealers in light pleasure vehicles, and show as handsome and varied an assortment as can be found anywhere.

The Veteran Jno. R. Behan is still selling carriages, buggies, road carts, phaetons, and vehicles of all kinds, harness and horse goods, at his old stand, corner Park and Chestnut avenues, Summit, N. J. He speaks cheerfully of the business situation and sanguinely of the future. Mr. Behan carries a nice selection of everything on wheels. His long experience, excellent judgment and good taste commend him to purchasers as just the man to call on for what they may need in the vehicle line.

T. H. Decker, proprietor of the Standard livery stables and dealer in carriages, wagons, and sleighs at 600 Bloomfield avenue, Bloomfield, N. J., is always on deck or within hail. He is an "expert" in his business and is most ably assisted in making it a success by Mr. E. B. Budd, his very efficient and wide-awake manager. They work together as kindly as the best team in their stables, and that means everything. As horsemen, they have no superiors, and as carriage men they stand in the van with the best of them. They know their business, and what is better, they do it, not only to their own advantage, but to the benefit of all who patronize them. They supply anything needed and with a promptness and courtesy that have made them esteemed and trusted by all who have dealings with them.

W. H. Packer, manufacturer of and dealer in carriages, wagons, bicycles, harness and hardware at Saddle River, N. J., is a young man of pluck and energy, who spares no trouble to give perfect satisfaction to everyone who deals with him. He is a firm believer in the golden rule which controls the action of all straight business men and good citizens. He seeks to take no advantage of any man, but he expects the other party to a deal to act just as squarely with him. He is the local representative of the Richland Vehicle Co., W. N. Brockway, the Buckeye Buggy Co., and other firms of like reputation. I am pleased to say that Mr. Packer is meeting with all the encouragement he so well has earned.

At Bridgeton, N. J., I had the pleasure of once again meeting Mr. Thos. Atkinson, proprietor of the livery and boarding stables on Warren street. Mr. Atkinson deals exclusively in carriages, buggies, phaetons, runabouts, carts, etc., carries an assortment from the most reputable factories and his facilities are such that he can offer taking inducements to purchasers. He is a close buyer, knows his trade intimately and is a most urbane and affable gentleman. He is local agent for W. N. Brockway, Homer, N. Y., and the Ruebenstein road wagons.

Jas. W. Green, Salem, N. J., manufacturer of and dealer in carriages, wagons and sleighs, makes to order and repairs anything on wheels and shows a fine assortment of high class carriages and light pleasure vehicles. He is the accredited representative for Salem and surrounding territory of the Watertown Wagon Co., H. H. Babcock & Co., the Richland Vehicle Co., and other prominent manufacturers of strictly fine work. Mr. Green prides himself upon being up with the times and a little ahead of them. He buys nothing that he cannot guarantee, and guarantees every vehicle that he sells.

L. B. Wright, carriage builder, Woodstown, N. J., besides making and repairing everything in the line of reliable and handsome vehicles for pleasure and business purposes, is agent for the Columbus Buggy Co., the Cortland Wagon Co., the Richland Vehicle Co.,

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the Eastern Branch of the P. P. Mast Co., the Martin Carriage Works, and the Gas-White Carriage Co. Mr. Wright has always in stock a full assortment of the latest styles and designs, and is all right in prices and methods of dealing.

Hand & Grist (T. Hand & J. A. Grist), owners and conductors of the livery stables and repository at Atlantic City, N. J., also dealers in up-to-date vehicles. They handle only what they can recommend. Both gentlemen are of long experience, exquisite taste and fine judgment.

Wetherhold Bros., of Reading, Pa., are practical and hardworking builders of heavy and light vehicles. They are prepared to manufacture anything in the carriage or wagon line and to do all sorts of repairing pertaining to their trade. Young and progressive, they are bound to succeed. Besides their own manufacture, they show a fine line from the leading makers of the country, notably the fine work of the Richland Vehicle Co.

Hilles & Taggart, Norristown, Pa., handle carriages, buggies, wagons, Dearborns, Frazier road carts, sleighs, etc. They do a large business and make good terms to purchasers. They are shrewd buyers and well equipped. They are local agents for the Keystone Wagon Works and of the Philadelphia branch of P. P. Mast & Co.

Samuel W. Wilson, A. Louis Pugh and J. Henry Wilson, comprise the firm of Wilson, Pugh & Wilson, manufacturers of carriages and dealers in wagons, harness and farm machinery at Oxford, Chester County, Pa. The house is one of the oldest in the State, having been established in 1863, and for enterprise, progress and business ranks among the foremost in its section. All the gentlemen named know their business, know the trade, know how to treat the men they buy from and sell to, and consequently stand high commercially, financially and socially.

Harrisburg, Pa., has no better, more strongly established or more popular house in any branch of business than the Harrisburg Carriage Repository, of which Edward Boyer, good man, expert mechanic and energetic business man, is proprietor. Everyone in the capital, yes, every carriage man in the State, we might say in the trade throughout the entire land, knows Boyer, the man whose word is as good as a United States bond. He handles only the best and carries a stock to meet all demands. Mr. Boyer is general agent for the Richland Vehicle Co., and numerous other manufacturers of twentieth century vehicles of every description.

On Chestnut Hill, Philadelphia, stand the well known shops and repository of William H. Godshall, builder of coaches, carriages, hearses and light vehicles for all uses. Mr. Godshall is so favorably and universally known that good words for him are like sending coals to Newcastle. He is one of those men who can stand on the reputation he has made for himself. He is the Philadelphia agent for the famous "Rubinstein" runabout and speeding wagon, and shows a complete stock of the latest and best produced by leading makers.

Burton & Worth, wholesale and retail dealers in agricultural implements, seeds and fertilizers at West Chester, Pa., are also owners and conductors of a well managed and stocked carriage and harness bazaar in that city. They have on hand everything in their lines that a farmer needs, and guarantee perfect satisfaction to all who trade with them.

One of the biggest and jolliest men that I meet on my Pennsylvania pilgrimages is my genial and adipose friend, Garrett McMaster, vice-president and general manager of the Manayunk and Roxboro Boarding and Livery Stable Co. Every man, woman and child in Manayunk knows and likes Garrett; he's one of those whole souled fellows who acknowledge that this world is full of good people and all that is necessary to "get along" is to hustle for yourself and treat others right. Mr. McMaster, as the representative of his company, has in stock and for sale at all times a full assortment of the better grade of light pleasure vehicles from the representative factories of the United States. He caters to a critical class of patrons, but suits them so well that he is about to erect large additions to his big place on Green Lane and Smick street.

Mr. G. Russell King, whose handsome and well equipped establishment is at Easton, Pa., is an energetic and practical young gentleman, an adept in all departments of the carriage trade and keeps on hand an elegant and varied assortment of vehicles for the people of to-day. His selections are made with taste, judgment and an appreciation of the wants of Easton and tributary territory. Mr. King is local agent for the Steam Mobile and for the Richland Vehicle Co., etc., etc.

J. A. McFarland, who is the heaviest retail dealer in carriages, harness, farm implements and harvesting machinery in Gulf Mills, Pa., is a gentleman whose very appearance inspires and invites the confidence universally given him. His heart is as large as his body, and his brain and business acumen equal to either. He makes a specialty of ministering to the wants of his neighbors (every one within reaching distance of Gulf Mills) in the vehicle line, and has secured the local agency for the Columbus Buggy Co., York Carriage Co., Richland Vehicle Co., Cortland Wagon Co., Monarch Buggy Co.

Scranton, Pa., is a wideawake town and one of its leading firms is A. R. Gould & Sons, who are wholesale manufacturers of and dealers in carriages, wagons, sleighs and harness, and who do all kinds of repairing and painting and scientific horse shoeing. The gentlemen composing the firm are A. R. Gould, the veteran who founded the house in 1859; W. S. Gould and R. T. Gould. They have one of the finest repositories in the State and carry a stock of vehicles that is hard to excel in beauty, variety, style and all the qualities that constitute perfection.

James K. Probey, of Washington, D. C., is an extensive dealer in carriages, wagons and harness. He buys intelligently and exhibits unusual taste in his selections, knowing exactly what his patrons wish. He shows a particularly fine stock of pneumatic vehicles and is prompt to fill orders in the most satisfactory manner.

S. J. Meeks' Sons, manufacturers and dealers in carriages, buggies, phaetons and wagons, Washington, D. C., have facilities that fit them to make anything on wheels to order, also repairing, painting, trimming, etc., in first class style on short notice. They carry on hand the latest and best productions of the leading Amesbury, Mass., firms, the Westcott Co., Richland Vehicle Co., the Geneva Wagon Co., and other factories that turn out up to date and reliable vehicles.

Frank Howshield, the worthy son and successor of his father, the late Fred. Howshield, who stood in the van of the carriage and harness trade of New Haven, Conn., occupies the old premises on Bassett street and follows straight in the footsteps of his parent. Frank Howshield knows as well as his father how to shield his fellow citizens from any imposition in the purchase of anything that goes on wheels or in the harness of the animals that propel them. Honest, hard working, well posted and up with the times, Frank Howshield is known all over the State as a reliable man and eminently fit to wear the mantle that has fallen upon him. He makes and handles only the best and is the accredited agent for Morris Woodhull, the Geneva Wagon Co., the Cortland Cart and Carriage Co., the Buttons, of Hartford, the Homer Wagon Co., the P. P. Mast Co., the Richland Vehicle Co. speeding wagons, and other manufacturers of established reputation.

Flynn & Doyle—good names both, and first class are the men who bear them—are makers of carriages, sleighs, etc., and dealers in carriage makers' supplies, hard and soft wood lumber, bicycles, harness, paints and oils, hardware, etc., at Bantam, Conn. Progressive, straightforward and honest, they offer to all purchasers the best in the market, guaranteeing a square deal in all cases. They are safe men to do business with, as your correspondent can testify from experience.

Judson Armor, manufacturer and dealer in everything on wheels and dealer in horse goods and harness, East Downington, Pa., is known and honored as the "Old Reliable." He has the agency for the eastern branch of the P. P. Mast Co., the Richland Vehicle Co., the York Carriage Co., the Owosso Buggy Co., and can furnish on short notice any desired vehicle from any factory in the country. In addition, Mr. Armor repairs all vehicles in first class style and carries the favorite lines of bicycles and repairs for them.

C. F. Seltzer, Pottsville, Pa., manufactures and deals in all kinds of harness, buggies, carriages, trunks, bags, etc.; makes a specialty of fine buggies and shows a large selection of fine harness. Mr. Seltzer is particular to carry a complete stock of desirable goods in all lines of his trade. He is the local agent for the Columbus Buggy Co., W. N. Brockway, the Richland Vehicle Co. and other producers of the latest and best styles of carriages, buggies and vehicles for all uses.

I have a whole lot more of good and true men to tell you and your readers about, but I fear you cannot give me space this month, so I will wait until next, when I hope to resume my account of the men I saw and what they are doing. The carriage men of this country are up to the "Hub" all the time, and that's one reason we are doing better now than ever we did, "mobile" it how some people may.

Yours, W. J. R.

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ANTAGONIZING DRUMMERS.

He must be a very dull merchant who does not treat his customers with courtesy. Any man who has even a spark of the trading instinct feels intuitively that it is impossible to establish profitable commercial relations with any one by treating him simply as a purchasing machine. Every man has his own ideas, tastes, prejudices, and above all, feelings. He may become accustomed to differences of opinion; he may distrust his own tastes; he may be ashamed of his prejudices, but the man who tramples on his feelings arouses in him a deep, although latent, antagonism. If there is any fool in this world it is the fool who plays wantonly on other people's passions. Sooner or later he pays the penalty of his folly.

It is a curious thing that there are so many retailers and retail buyers who, while painfully careful of the feelings and interests of their customers, are utterly oblivious to the feelings and interests of the commercial travelers with whom they come in contact. Let a man approach them as a purchaser and they are all smiles and suavity. Let him approach them as a seller and they do not even treat him with common decency. They seem to feel an ignoble pleasure in visiting upon the head of the wholesaler's agent all the snubs, meannesses and contemptible tricks that they suffer from their customers. Like the man who, when whipped on the street corner, went home and beat his wife, they seem to feel that it is safe to disregard the feelings of the commercial traveler. As a consequence there is many a merchant doing business with traveling men who, while booking his orders, curse him in their hearts, not because he is a close or shrewd buyer that they cannot overreach, but because to get his order it is necessary to put up with an amount of humiliation that stirs their deep resentment.

Business is business and a commercial traveler or any other solicitor for patronage expects to put up with discomforts and annoyances, but no one has the right to ask him to patiently endure unnecessary humiliation. He who does shows an amount of conceit, an ignorance of the world and a capacity for making enemies that sufficiently prove his own insignificance as a man and a merchant.

There are men on the road as elsewhere who can not be too severely treated, but they are exceptions. The average traveling man has an exceptional knowledge of the world, exceptional powers of observation and insight into characters and conditions, and an inside knowledge of goods and men that make him a mine of information, a traveling storehouse, for the people with whom he comes in contact. With his access to the credit men of great wholesale houses, his acquaintance with other traveling men and his many relations in the great markets of the country, he is a commercial factor whose influence it is hard to overvalue.

What folly it is to excite without provocation the ill will of such a man. What stupidity it is to irritate him and antagonze him unnecessarily.

If merchants could hear the estimates and criticisms that commercial travelers pass on them among themselves they would often be amazed and astounded at the things said. It is just that kind of keen incisive criticism, gathered from a wide comparison of men and methods, that it is useful to get at in a friendly way. The traveling man can give many valuable hints and suggestions to his friends. He can, while booking their orders, withhold much valuable information from customers who have antagonized him, and he can do both without any violation of confidence. A traveling man said not long ago: "There's C—, of Blankville. I never sold him a bill of goods and never expect to, but I never visit the place without calling on him. I sell his rival in the town, but C— is my friend. The other man I do my duty by. C— always treats me pleasantly; the other man rarely does. I have given C— many valuable hints. He appreciates them, and I have been of material service to him with other traveling men. He's a good fellow and popular with the men on the road."

If a merchant cannot see the advantage of having the good will of the traveling fraternity, let him remember that credit and the amount of consideration shown the retailer by the wholesale house are often materially affected by the traveling man's favorable or unfavorable attitude toward him. It's a hard thing to be hard on a man whom you like, and the reputation of being a nice man to do business with is a valuable moral asset. Again, it is a good thing to have the good will of the men from whom you never have bought and never expect to buy goods. The time may come when they can speak a word for or against you. The prestige for good or evil built up about us by the involuntary estimates or actions of other people has its fruit as much as our direct efforts.

A buyer in an eastern city who was well known for his lack of consideration to wholesale houses lost his position. For a long time he was unable to get another. In speaking of the matter an acquaintance said: "Half a dozen men of less ability than he have stepped into positions that he might have had, but he antagonized all the people who otherwise would have been glad to help him, and so he has been left out in the cold."

One can never tell in this world when or how he will reap the fruits of his courtesy or discourtesy towards others. A merchant is a fool if he wantonly subjects any class of men with whom he comes in contact to treatment that rouses their antagonism. He should and will suffer somehow for his folly.—*Apparel Gazette.*

RETURNING GOODS—A PERNICIOUS TRADE PRACTICE.

W. A. GIVEN.

The constant returning of goods is a source of great annoyance and extra expense, requiring extra clerical service and more work in many departments. It is also in many cases a source of positive loss, by reason of goods coming back in a damaged condition, or so long after purchase as to be unseasonable—and the wholesaler divides his feelings (?) between the fear of loss on the goods so returned, and on the other hand the fear of losing a customer if he refuses to make the credit.

The retailer who is guilty of this practice evidently does not realize that he is gaining an unenviable reputation in the business world, and that it affects his credit standing in a very great degree.

However, the wholesaler is very largely responsible in furnishing the excuse for the return of goods. Orders are frequently made out in a careless manner by the salesman, leading to mistakes in filling. Still more frequently are substitutions made in the hope that the customer will keep the goods when they are at his store, of course knowingly taking the risk of their very just return.

We must not overlook the fact that misunderstandings often occur in filling orders, and for all these reasons the customer is certainly justified in making returns.

By such faults of the wholesale house the customer falls easily into the habit of returning goods, and is then not always too particular about having good and sufficient cause for his action.

This is a case where reform must begin at home. Let the salesman use more care in taking the order and the house in seeing that it is correctly filled, and the annoyance of having goods returned will be much reduced.

The aggravated cases will then come more forcibly to the attention of credit men, who will find little trouble in appraising such actions at their true value.

MASTER CAR AND LOCOMOTIVE PAINTERS' ASSOCIATION OF THE UNITED STATES AND CANADA.

OFFICIAL NOTICE OF ANNUAL CONVENTION.

Secretary's Office, Kent, O., August 1, 1901.

The thirty-second annual convention of this association will be held at Buffalo, N. Y., September 10, 11, 12 and 13, 1901, convening at 9 o'clock A. M., on Tuesday, the 10th. The official headquarters will be at the Columbia Hotel, where a meeting room in which to hold the daily sessions has been secured.

This hotel is on the European plan. The rates are from $1 to $3 per day for each person, according to location and size of room. Rooms may be engaged by writing to the hotel, stating what priced room is desired, and it is urged upon the members to secure rooms as early as possible so that all may be accommodated at this house, where it will be most convenient to attend the meeting.

A cordial invitation is extended to foremen car and locomotive painters throughout the States and Canada to meet with us in convention and receive the benefit of the discussions on the several subjects on the programme.

The committee on the several questions will please send a typewritten copy of their reports to the secretary ten days previous to the date of meeting.

Fraternally,

Robert McKeon, Secretary.

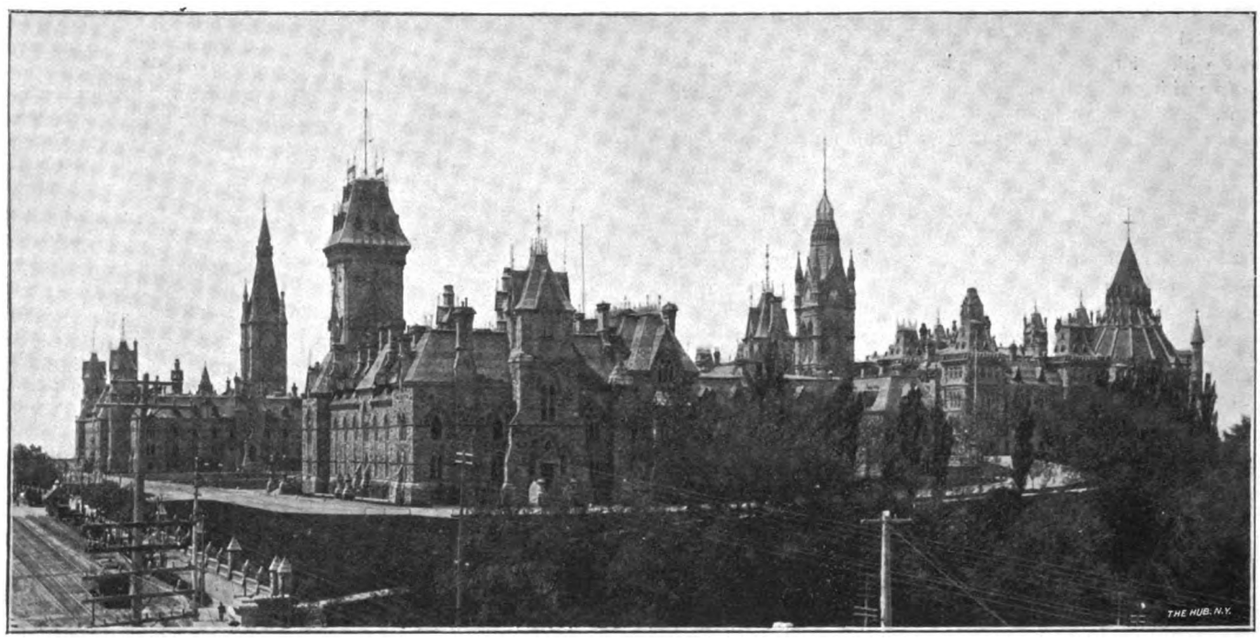
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DOMINION OF CANADA.

Canada's Great Exposition—Industrial Canada—Notes Regarding Cities, Towns and Industrial Houses.

THE Dominion of Canada, with the exception of a small percentage of its population, evidences all the go and push of our people on this side of the line and all through its southern belt manufacturing is assuming great proportions, while in its great western section agriculture is making rapid strides. In Lower Canada (Quebec) the French-Canadians retain more of the national characteristics of their fathers than do those in Upper Canada (Ontario) and Manitoba and British Columbia. One may go through the French quarters of Montreal and Quebec and meet natives who can speak no other language but the French; men, too, who are engaged upon, and yet right here in Manitoba is the land that now grows wheat second to none in quality and which for generations to come will prove one of the greatest granaries of the world."

Canadian thrift and enterprise have constructed great lines of railways that have opened immense tracts of forest and farm land and populated great districts with an energetic and progressive people. The present population is placed at 4,829,411, about four-fifths of whom are native born. Ontario contains nearly one-half of the entire number, and Quebec ranks second, British Columbia and Manitoba following in the order named. Next to Ontario and



PARLIAMENT BUILDING AT OTTAWA.

in business enterprises of considerable magnitude. This is even more noticeable among the agriculturists in the Province of Quebec. These people cling tenaciously to their language and religion, and in many sections the outsider who cannot speak French finds himself as much a stranger as if in France, notwithstanding a great majority speak English and many speak both languages. This fact makes Lower Canada a novel place to visit, and one that is full of interest. The French section of Montreal excites the curiosity of those who have never visited that city, while the great churches and nunneries show the devotion of this portion of the population to their faith, and there is no city on this continent that possesses so many features of interest to travelers as Quebec. The old walled city and the plains of Abraham, where Wolfe fell, revive recollections of wars past, but time and progress are making rapid strides.

The people of the Canadas and other parts of the Dominion are industrious and frugal, and evidence a spirit of enterprise that is a surprise to those who have nursed their school day fallacies that the land is one of ice and snow, a land where furs form the staple product, and one where agriculture has but little to encourage settlers; and yet away up in Manitoba our early geographies located a territory of ice and snow, and where the great fur companies were the only people who could gain a livelihood there are millions of acres of the best wheat land in the world. Had our fathers, who talked "50:40 or fight," been aware of the facts regarding this territory they might not have been so willing to fall down to the 49th parallel and peace. A few years ago one of the great mill owners in Minnesota said at a banquet in Winnepeg: "Our people took all they thought would ever be habitable by man, and England took what was left, not so much because of its value as because of that country's habit of taking everything it could put its hands Quebec Manitoba is attracting the most attention, owing to the richness of its lands. Winnipeg, the principal city, was formerly known as Fort Garry. The headquarters of the Hudson Bay Company, its population has grown from 241 in ..?..? to about 30,000 in 1901—from a scattered settlement to a thriving city, having all the modern appliances and advantages, and although it depends mainly upon its agricultural resources, it is beginning to develop manufactories of various kinds.

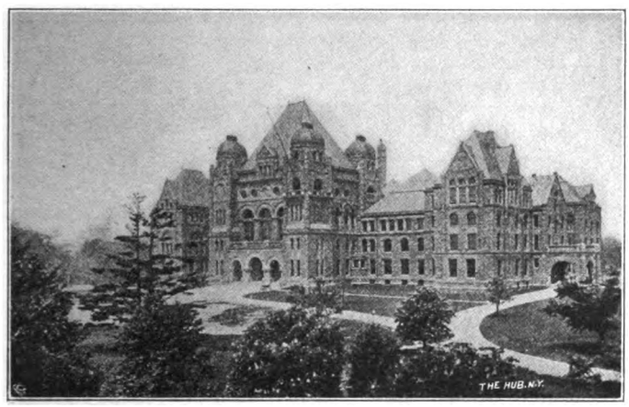
The great Province of Ontario has for its principal city Toronto, located on Lake Ontario. The site of the city was originally very marshy, and it was long known as "Muddy York." It was incorporated in 1834, and the name of York was dropped, and Sir John Colborne, who was at the head of affairs, altered its style back to the old Indian name, the meaning and derivation of which is a little obscure, some being of the opinion that the word comes from the Mohawk Dr-on-do—"trees in the water," others that it is an Indian name signifying "place of meeting." At the first election of the city, W. Lyon Mackenzie was elected as its first mayor. As the land extends back from the lake it has a gradual rise, and a mile from the lake is 108 feet above the water level, and two miles farther on it is some 250 feet; four or five miles north the city seems to be at one's feet.

Eight lines of railway, as follows, now have terminal stations in the city: The Grand Trunk Railway, operating the East and West Divisions, the Southern, Midland, Northern and Northwestern Divisions; the Canadian Pacific Railway, operating the Toronto Grey and Bruce, the Credit Valley, and the Ontario and Quebec Divisions. During the season of navigation, steamers run to and from all salient points, and numerous schooners make Toronto their port of entry and exit.

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In the city of Toronto there are at present about 52,000 public and private buildings, and the population is placed at 250,000. There are 2,500 industrial establishments, with an invested capital of $40,000,000; employing 35,000 hands; paying $10,000,000 in wages, with an annual output of over $55,000,000. The exports of the city amount to $3,984,000 a year, and the imports to $17,731,000.

In Toronto are many handsome buildings in every sytle of architectural beauty—lovely residences, magnificent commercial edifices, grand colleges, stately churches, impressive civic and legislative



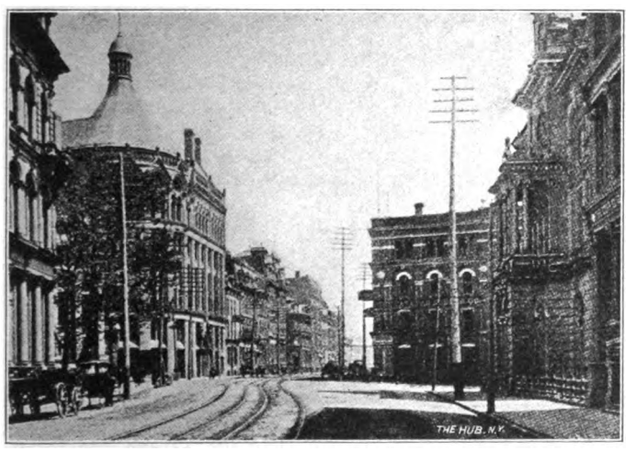
NEW PARLIAMENT BUILDINGS, TORONTO.

halls and other structures, not so pretentious perhaps, where science and art, benevolence and fraternization, amusement and recreation serve to adorn the interior.

Toronto is univervsally known as the "Convention City." Delegates from all civilized parts of the world have met there and lauded its praises. No other city on the continent is so favorably situated for the purpose, geographically, climatically and in every other respect. The comfort of the hotels and their moderate prices are matters of surprise to travelers, and the facilities for all kinds of the highest class of enjoyment are second to no other city in the Western Hemisphere.

The carriage and sleigh industries are quite extensive, there being numerous firms engaged in the business, many of whom produce a good line of carriages and sleighs, while there are several large houses engaged in the carriage material and hardware business. These handle lines of trimmings, woodwork, forgings, paints, etc., manufactured in the States, but not so extensively as formerly, owing to the high duties imposed by the Canadian government.

Among the prominent Toronto manufacturers are the Gutta Percha & Rubber Manufacturing Co., who are the local agents for the



FRONT STREET, TORONTO, LOOKING WEST FROM YONGE.

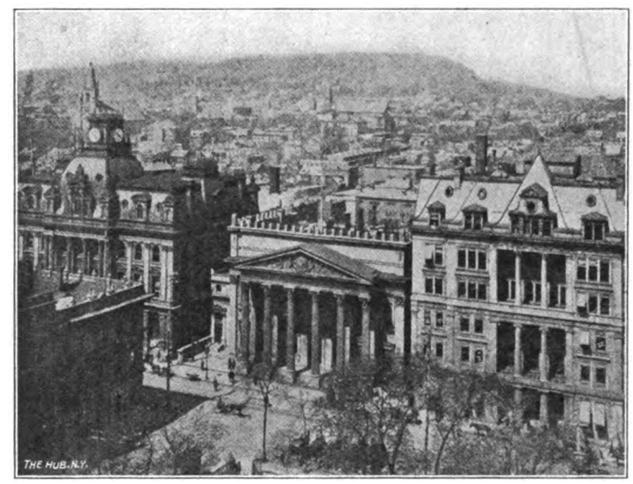
Kelly Springfield tires and are the only Canadian manufacturers of these tires. In addition to their Toronto house, they have agencies at Montreal, St. John, Halifax, Kingston, London and Ottawa. They supply many of the leading builders of the vehicle in the Dominion, as well as wheel manufacturers, and do an extensive trade.

D. Conboy, who manufactures what is known as "Conboy's Top," which has a patent roller curtain and a prop spring for raising and lowering tops, also trimmings, seats, bodies, etc. He has a good local and shipping trade.

The Imperial Varnish & Color Co., Ltd., to whom must be given the credit of introducing a carriage painting system entirely original to themselves, and totally different to any other system in use, inasmuch as it provides for the painting and finishing of both body and gears with materials which are elastic from the primer to the finishing coat of varnish, doing away entirely with the old treacherous Japan color coat and glaze putty.

When a representative of THE HUB called at their factory last month he was surprised when shown some work being done in its different stages, that such splendid surfaces could be produced with so little material.

This is where they claim their great point of overcoming, checking and peeling comes in, as they pointed out that the less material you put on to bring out your surface the less danger there is of this trouble. Our representative also saw a rig that was painted two years ago with the system and has been in constant use since, which demonstrates beyond a doubt that extreme durability is also embodied in their goods. They concede that being up to date is a boast often made by varnish and color concerns, but claim that there has to be a leader or the "date" becomes very stale, so far as carriage painting is concerned; it is so old and musty one must go back several generations to find its origin. Many improved methods and systems have been introduced in the process of its evolution, but the Imperial Varnish & Color Co., Ltd., Toronto, whose full page advertisement appears in this issue, claim that they have a method that is far in advance of any now in use.



MONTREAL AS SEEN FROM THE TOWER OF NOTRE DAME, BANK OF MONTREAL IN THE FOREGROUND.

The larger wholesale plants, however, are not located in Toronto, but in other thriving towns. At Brantford, Ont., a thriving town of about 13,000 inhabitants, is located the Brantford Carriage Co., the Canadian branch of the Cortland Wagon Works, of Cortland, N. Y. This is one of the largest plants in Canada. They manufacture a very general line of buggies, runabouts, surreys, etc., and are enjoying a satisfactory business.

Gananoque, Ont., a town of about 4,000 population on the St. Lawrence, opposite the Thousand Islands, has grown into a busy carriage mart. Here is located the Gananoque Spring & Axle Co., one of the leading spring and axle manufactories of Canada. They manufacture all lines of carriage springs and axles of all standard patterns, including the Collinge, together with wagon skeins. The business is an extensive one, and the house one of the most energetic of Canada's manufacturing establishments.

The Ontario Wheel Co. are also located here. They have the exclusive control of the Goodyear Rubber Co.'s line of rubber tires for Canada, and are also manufacturers of several styles of the patent-handed wheels, as well as the plain wood wheel. They have a large and growing business. Here, too, is located the oldest carriage factory in Canada.

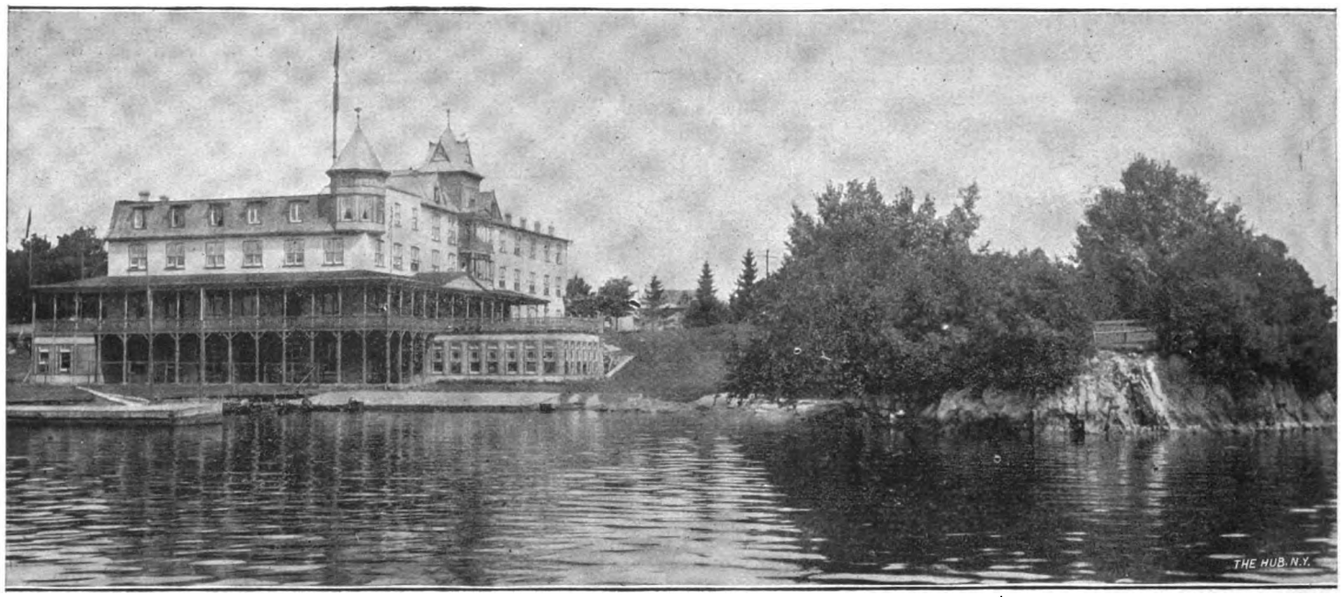
Right in the heart of the Admiralty Group, the most picturesque group of the famously beautiful Thousand Islands of the St. Lawrence River, is Gananoque Inn. Although centrally located, it is on the mainland, making it the most accessible situation on the St. Lawrence River. From New York and the Eastern States it is

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reached via New York Central Railroad to Clayton, and a delightful sail of eight miles through the islands by steamer. The Innis steamer connects with all New York Central trains at Clayton. The Grand Trunk line operates to the very door, and the numerous river lines stop within a hundred yards of the house.

On the North Shore of the St. Lawrence the prevailing southwest wind, which is hot on the south shore, is cooled by passing of eight miles of running cold water, and comes to the spacious verandas with the cooling and refreshing stimulus imparted only to the air by cold water. Lighted throughout by electricity, supplied with elevator and electric bell service, every facility is offered to keep cool, while the whole house is warmed on chilly mornings and evenings by the hot water system.

The children find a fine large building for their playground entirely separated from the Inn, and here, too, are also located the bowling alleys, affording amusement for those who wish it. Another of the attractions is the picturesque golf ground, located just east of the hotel all along the river front. Although not covering more than 1,684 yards, the course is a very pretty and sporty one, as nature has been very kind to the golf admirer as well as to the professional, in saving him a lot of time, labor and expense by providing a very liberal amount of bunkers, ditches, rivulets and hazards. The traveler could not fail being delighted with the dining room. The chef is competent and the cuisine most excellent. The location of the dining room, in an extension, afforded a beautiful view of the river from every table.

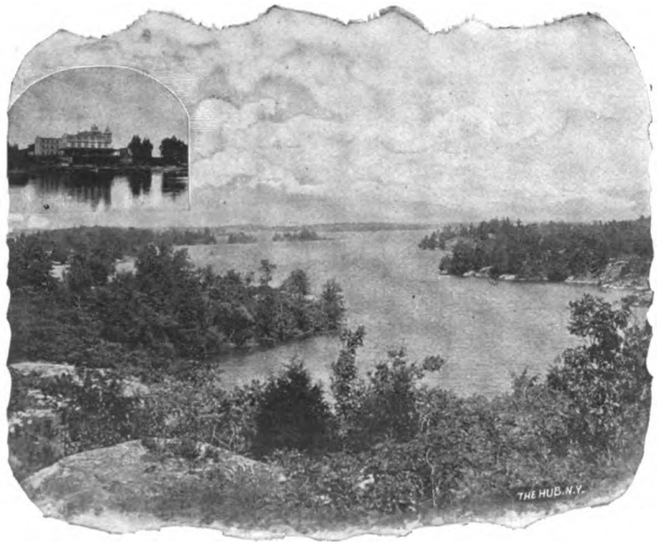


GANANOQUE INN, THE OLDEST CARRIAGE FACTORY.

Magnificent rooms, large and airy, wide halls and pleasing views from every window and veranda give the last necessary touch to the artistic comfort so necessary to the summer's day pleasure of persons of taste.

Not only is the quaint old town of Gananoque a veritable maze of curious and beautiful nooks, affording objective points for pleasant rambles, but the world renowned Thousand Islands offers smooth water for boating in the famously easy rowing St. Lawrence skiffs and daylight and moonlight sails in the hotel steamer, "Antelope."

The fishing of the Thousand Islands is well known, and the "fish stories" of the region abundant. It is sufficient to say in this connection that the Inn is within sight of some of the best fishing grounds of a region noted for the gameness of their bass. Excellent music is furnished during lunch hours and for the evening "hops."



VIEW FROM OLDEST CARRIAGE FACTORY.

Alfred S. Amer is too experienced an hotel manager not to realize how much the comfort of his guests can be improved by keeping up the little social features, and life at Gananoque Inn is one round of pleasure.

The American Canoe Association will hold its annual meet on an adjacent island during August, and many a pleasure-seeker, tired out with his visit to the Pan-American, will run over to Gananoque on the boat to take a few days' rest before returning to the city for the fall.

And this is the oldest carriage factory in Canada! It is hard to realize that this beautiful parlor, surrounded on three sides by wide verandas, filled with hammocks and easy chairs and shaded by awnings, was at one time the light machine room of the Canadian Carriage Co., and that thousands of buggies and cutters, etc., started to exist here. Of course the verandas were not there, but the same walls, with their bright decorations above the assembled guests, formerly held the shafting of Canada's first carriage factory.

With all our enthusiasm for the carriage trade, we had never slept in a carriage factory before, and the novelty seemed to give just the relish which added the finishing touch to our stay at the oldest carriage factory in Canada, "Gananoque Inn."

The Guelph Axle Manufacturing Co. is located at Guelph, Ont., a town of about 13,000 inhabitants, on the line of the Grand Trunk Railroad. The company manufacture every style and make of axles for carriages, buggies and wagons. They make a specialty of the "Anchor" brand of axles and furnish as well crank axles, axles in pieces, all sizes of half Collinge and long distance axles, and are doing a flourishing business.

Among the most progressive and enterprising firms engaged in the carriage business is that of Monroe, McIntosh & Co., of Alexandria, a small but thriving town near the eastern boundary of Ontario. The business was started twenty years ago by H. Monroe in a small way. He was joined five years later by Mr. McIntosh, since which time the business has had a steady and healthy growth, until now the company put out about 3,000 vehicles yearly, and its growth shows what may be done by energetic persistence, as the only capital the founders had to begin with was their daily earn-

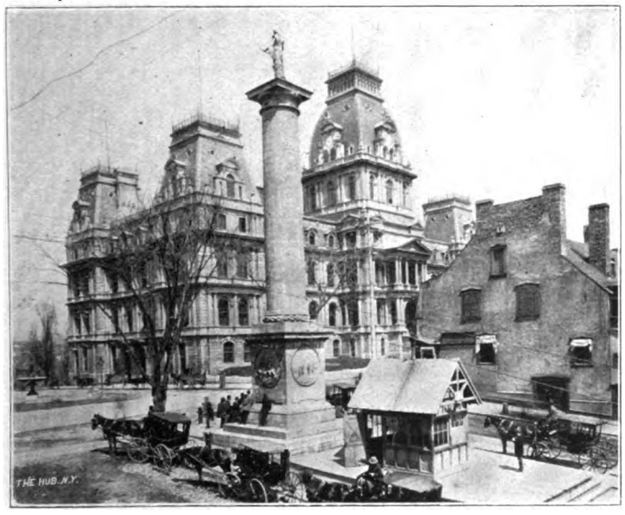
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ings. The factory is favorably located in the heart of the best carriage timber district, and the company have a choice stock of second growth of oak, ash and rock elm to select from. This, together with economy in manufacture, has enabled them to build good work at moderate cost, and removed the temptation to build low grade vehicles. Their reputation for good work stands high, and their vehicles find a ready market in the western as well as in the eastern parts of the Dominion. Mr. Munroe has for several years traveled all over Canada and has formed an extensive acquaintance with buyers. Mr. McIntosh gives his attention strictly to superintending the manufacturing, and by the strict personal attention given by members of the firm is due their present success. They have excellent shipping facilities, and are thus enabled to obtain favorable transportation rates. With so many conditions in their favor, and the close and watchful attention given to the business by the firm, one can readily understand why they succeeded so well.

The Canada Carriage Co., now of Brockville, Ont., formerly occupied the Gananoque Inn at Gananoque. The town contains a population of about 9,000, and is located on the St. Lawrence River, near the eastern boundary of Ontario, and on the line of the Grand Trunk Railroad. The factory is a large four-story building, well equipped with modern machinery. They build for the trade a complete line of buggies, phaetons, surreys, traps, road wagons, spring wagons, carts, etc. This was the first house to introduce modern methods and machinery in the production of high grade carriages in Canada. They follow very closely the models of light work built on this side of the line, and make such specialties as are called for by Canadian buyers. Their business is a steadily growing one, as the class of work built meets the requirements in quality and price of the Dominion buyers.

The McLaughlin Carriage Co., located at Oshawa, Ont., have the largest plant in the Dominion. It has a floor space of 151,000 square feet under roofs, and an annual capacity for 14,000 vehicles. The house has been established thirty-four years, and has from the beginning prided itself on building high grade work and in keeping in close touch with the times in styles. Their motto is, "One grade only, and that the best," and the popularity of their products would indicate that buyers are satisfied that they live up to this motto. Their line covers all popular classes of road and family carriages. In addition to their carriages, they are extensive builders of sleighs, and will turn out over 3,000 for this winter's trade. Our Canadian friends have set many styles for sleighs and done much toward changing the character of those built on this side of the line, and this company are entitled to much credit in this direction.

A. B. Jardine & Co., manufacturers of blacksmiths', machinists' and other ironworkers' tools, are located at Hespeler, Ont., a town of about 2,000 inhabitants situated a short distance southwest of Guelph. They make a full line of desirable tools for power or hand work, among which is a newly patented power drill.



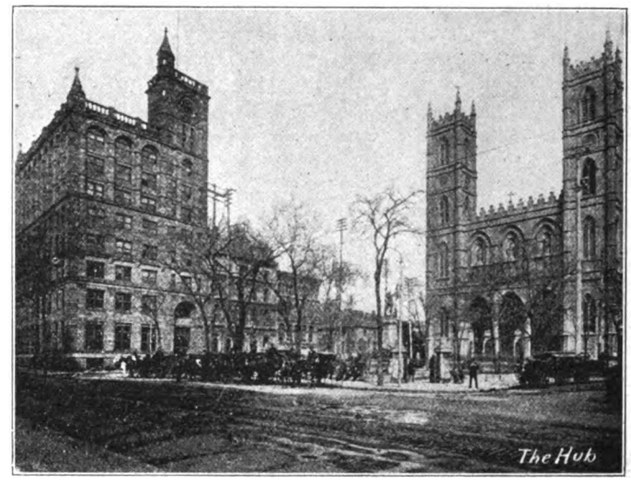
CITY HALL, MONTREAL.

Guelph Carriage Top & Hardware Co. manufacture carriage tops and trimmings, as well as bodies, seats, gears, etc., and carriage hardware. Their line is a very general one, and their product of a character to invite purchasers. They are one of the live business houses and have won a high reputation for the character of their products, and are meeting with the success that comes from providing what the trade wants.

The Dunlop Tire Co., of Toronto, control the Dunlop patents for Canada, and are supplying the trade with this well known tire.

MONTREAL.

Montreal, the largest of Canada's cities, is one of the most interesting to a visitor. It is not only a hustling, thriving commercial city, but it is also one in which manufactures flourish. It is virtually a seaboard city, as ocean steamers make it a western terminus. The main railway lines converge from the city and offer the best of inland transportation. It is a historic spot, and from the time Jacques



PLACE D' ARMES SQUARE, MONTREAL. CHURCH OF NOTRE DAME ON THE RIGHT.

Cartier visited the ground where it lies until now it has figured prominently in the history of the North American continent. The name given it by Champlain, the first governor of Canada, was Place Royal, when it was made a trading post, but the city was not founded until 1642, when a band of religious enthusiasts planned a town and called it Ville Marie de Montreal. Founded as it was, it has always remained a city where the church influences predominated. It became a British province in 1760, but the great preponderance of French Canadians has kept it as a French city and one in which may be found great churches and church institutions. The old parish church of Notre Dame is one of the largest Catholic edifices on the continent, having a seating capacity for 1,500 people, and in it is one of the largest bells in the world. The McGill University, which was founded in 1828, is one of the foremost educational institutions in the world. Other large institutions of learning, fine libraries, art galleries, hotels and fine public buildings serve to beautify the city. The population is over 350,000, a great majority of which are French Canadians.

The cab system is noticeable for the vehicles used; these may be styled cabriolets, but they are hooded in a manner that deprives them of the appearance of the cabriolet. They are found in great numbers and cabby is about as sharp in his dealings with the public as he is elsewhere.

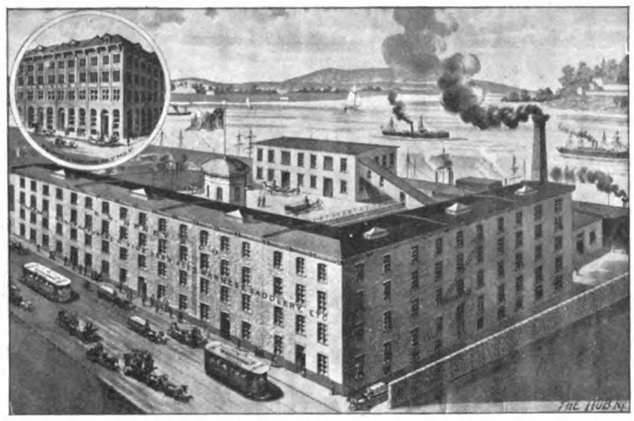
Montreal is more of a commercial than manufacturing city, but there are a number of large plants of various kinds.

Canada Paint Co., of Montreal and Toronto, manufacture high-grade colors and varnishes for carriage painting. They have perfected a time saving gear system by which they claim there is not only economy in material and time, but extreme durability as well. This system has been tried most thoroughly and the proprietors claim that it has more than met their expectations.

In 1875 there was established in Montreal a wholesale carriage builders' and harness makers' supply house, under the firm name of E. N. Heney & Co. A few years later they began to build carriages, and still clinging to the idea of unity of interest in the carriage and harness trades, manufactured the latter line as well. The correctness of their theory has been demonstrated by their remarkable success. Their total business is said to be the largest in Canada in this line. They employ six travelers, who are on the road all the time. Their trade not only extends to every part of the Dominion, but they are shipping extensively to South Africa, New Zealand and Great Britain.

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Their main carriage factory, on Notre Dame street, extends from Nos. 758 to 788. It is built of brick, with a frontage of 225 feet, four stories and basement. An L, 125 by 40 feet, and uniform in height, has been added. Beside this, the two story store business is 75 by 125 feet. Situated at the corner of St. Paul and St. Dizier street, and extending through to Le Royer street, where all the shipping is done, is one of the finest carriage, harness and saddlery warerooms in the Dominion. A stone building, 125 by 60 feet, Nos. 333-335 St. Paul street, and five stories and basement. The ground floor is arranged for offices and display room for a complete line of harness and saddlery and samples of finished carriages. Finished in natural woods throughout, with hardwod floors and polished oak fixtures, every detail of arrangement is carried out. With plenty of room and a very complete stock, it is certainly the equal of any wareroom in the trade. The upper four floors of half the building are now used as the harness factory.



PLANT OF E. N. HENEY & CO., MONTREAL.

With a capacity of 4,000 jobs a year, it is one of the largest plants in Canada. Mr. E. N. Heney, who is the directing spirit of all this equipment, finds time to lend a helping hand to public interests. He is vice-president of the Canadian Cold Storage Co., director of the Colonial Bleaching & Printing Co., director of the West Kootnay Power & Light Co., the largest electric plant in British Columbia, and a director of the Cuban Electric Railroad Co., of Havana, and a member of the principal clubs of the city. He is not only a very busy, but also an extremely popular man.

QUEBEC.

Any notice of Canada without including quaint old Quebec would be incomplete—a city that has more interest centered in it than any other on the American continent. The old city with its old walls and picturesque location, perched as it is on a high promontory at a point where the St. Lawrence and St. Charles rivers meet, it has been called the "American Gibraltar." All around one sees forts, castles, monasteries, convents, churches and a quaint and interesting people; houses huddled together on the edges of high cliffs, or in narrow streets overshadowed by the great citadel. One rides up the hills in the quaint caleshe, a two wheeled vehicle seen nowhere else. The driver is seated on the dashboard or forward end of the body, which is turned up to serve as such, or if slightly improved, has a narrow seat for the driver, whose feet rest upon the shaft bars. The harness being without traces, the hame tugs are hooked to the heavy shafts.

Its manufactures are largely confined to the production of goods for home consumption, and do not therefore figure to any great extent in Canada's industrial features.

OTTAWA.

Ottawa, the capital of Canada, is located on the Ottawa River, and has a site second only to that of Quebec. It was selected as the capital city in 1854 and since then has grown to be a point of interest. Here are located the Parliament buildings. It contains many other buildings of interest, but neither its manufactures nor commercial interests are important.

CANADA'S GREAT EXPOSITION, TORONTO, ONT., AUG. 26 TO SEPT. 27, 1901.

One of the most important of the annual exhibits on this continent is that held at Toronto. The exposition this year was opened by the Right Hon. Sir Wilfrid Laurier, G. C. M. G., Premier of Canada, on Tuesday, August 27th.

To those who have in past years visited the Toronto Exposition, known throughout the Dominion and the United States as "Canada's Great Exposition," it is hardly necessary to speak, as they have furnished abundant testimony that it is in their opinion the best annual fair and exposition on the continent, if not in the world. But to those who have not had the previous pleasure of being with us at fair time, we would say that the exhibition was established in the year 1879, for the purpose of placing before the people of this continent, and indeed of the world, in a forcible and systematic manner the immense agricultural, horticultural, dairying and manufacturing resources of the Dominion of Canada, and at the same time to afford its patrons a reasonable amount of relaxation and recreation combined with instruction. That the promoters and management have effectually succeeded in accomplishing their aims is evidenced by the fact that twenty-two successful successive annual exhibitions have been held, at which the attendance of visitors has increased from 70,000 at the beginning to upwards of 300,000 at the present time, representing all sections of the North American continent and not a few from other parts of the world.

The exposition for the present year will undoubtedly eclipse in extent and importance any of its predecessors. All the space in the various buildings, on grounds over 100 acres in extent, has been taken up, and while the display in every department will be a worthy representation of the individual arts and material progress of this great Dominion, not a few manufacturers in other parts of the world will be found to have seized the opportunity to bring their wares before the people of this country.

Among the exhibits will be a large line of carriages, sleighs, etc., machinery and implements. The usual number of outside attractions will be offered and on each day during the entire exposition there will be special exercises. Admission to the grounds is 25 cents. All the Canadian railroads have made special rates, one-half regular fare. Hotel accommodations are ample at rates from $1 to $4 a day.

Matters never looked more promising for the Toronto Exhibition to be held from from August 26 to September 7, than they do this year. Entries in all departments are good, while in live stock and manufactures they are well in excess of previous years. The show of cattle is bound to be superior to anything ever seen in Canada before, a number of prize animals having been imported especially for exhibition at Toronto. The Right Hon. Sir Wilfrid Laurier, Premier of the Dominion, on Tuesday, August 27, will undoubtedly have the gratification of opening the best of the twenty-three successive annual exhibitions that will have been held at the capital of the province. It will be thoroughly representative of the industrial arts, agricultural and horticultural products and general resources of this great country, and will abound in entertaining as well as instructive features. As becomes these warlike times the military will be much in evidence, arrangements having been made by permission of the general officer commanding and the minister of militia for daily practice with Maxims and other guns by the Royal Canadian Artillery, and for various cavalry evolutions by the Royal Dragoons. There will be the usual trotting, pacing and running races, balloon ascents by a man who escapes from a bomb that explodes a thousand feet in air, an entertainment of great variety in front of the grand stand, athletic sports, butter-making tests, judging competitions, experiments in photography by wire, an international military tattoo on the opening night, the best dog show in America, lectures on the cultivation of the sugar beet, music by a score of the finest bands in America, and in fact more attractions and novelties than could be enumerated in a column of this paper, the whole being nightly crowned by a representation of the bombardment of the Taku forts by the allied forces in China, concluding with a brilliant display of fireworks. While every day will be a great day from August 26 to September 7, the day of days will be Tuesday, September 3, when a reunion of Canadian Old Boys and students of all the colleges and schools in Canada will be held. The following day will be Farmers' Day, but the probabilities are that with a full programme every day and favorable rates on the railways the grounds will always be thronged by delighted crowds.

FOURTEENTH ANNUAL AUTUMNAL DINNER.

THE Institute of British Carriage Manufacturers hold their fourteenth annual autumnal dinner at the Royal Hotel, Bristol, on Tuesday, September 17th. THE HUB hereby acknowledges the invitation to be present, and extends thanks for the same. These annual dinners are quite a feature with British carriage builders, and are most enjoyable affairs.

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Automobile Department.

THE NEW ALLY OF THE VEHICLE TRADE.

(For illustration see "Latest Styles.")

For some considerable time now The Hub has devoted a good deal of space to automobilism, freely illustrating new designs and faithfully chronicling development, in order that its readers might be fully posted on a subject which is of so much interest to the carriage trade. Automobilism is in the air, and earnestly defending and jealously guarding, as we do, the legitimate interests of the carriage trade, we have wished our readers not to underrate or belittle the new industry which has evidently come to stay, but rather, by capturing it, make it contributory to, and an ally of, the carriage trade, feeling sure that if our own trade is not fully alive to the possibilities of the latest comer in locomotion there are plenty—cycle manufacturers and others—who are watching the new movement with a view to its exploitation. We must confess to no little disappointment in many of the types of automobiles which have been introduced, both from a carriage builder's point of view and in the light of artistic development. The great strains to be put upon the automobile were fully allowed for, and it was conceded that in order to get the necessary strength which higher speeds necessitated, it was incumbent upon builders to add to the bulk, strength and weight of material to insure safety—a primary condition before general adoption—and to some extent the graceful lines and beautiful designs which characterized some of the choicest specimens of our art would have to be sacrificed. The tendency for the last year or two in France and Germany has been to constantly add to the already excessive weight until their automobiles, not merely of the racing but also of the touring types, were taking on the weights and proportions of a road locomotive. Grace and beauty seemed no longer to be aimed at. Fortunately the proverbial good taste of the French people, or some other potent cause, has come to the rescue, and the Automobile Club de France, the supreme arbiter in such matters, has announced that, from now onward, any competing automobile in either the racing or touring classes must not exceed 1,960 lbs. in weight, while some of the autos in the late Paris-Berlin race weighed nearly three tons.

One reason, and the most important, why the frames, bodies and running gear of automobiles have had to be built so strongly arises from the fact that the motor is generally placed in front, covered by a bonnet, and instead of driving the front wheels, which are close at hand, the power is carried by transmission devices of various kinds back to the rear live axle, or to the back wheels, and the driving is affected by a chain and sprocket. In this way two-thirds of the weight is in front of the driving point, and has to be pushed. Buckling strains are set up and transmitted to the vehicle body, to counteract which the framework must be made extra heavy. Much of this extra weight seems to us to be entailed by a departure from correct mechanical principles. Such, too, is the contention of the builders of the Tractobile, the Pennsylvania Steam Vehicle Co., of Carlisle, Pa., whose advertisement appears in this issue. The Tractobile is a new departure, differing widely from anything now on the market, and as its builders are seeking the co-operation of the carriage trade we have much pleasure in drawing our readers' attention to the new invention, the success of which, from the numerous orders booked, seems fully assured.

In mechanical design the Tractobile has something in common with the railroad locomotive in so much as it is a complete motor in itself and can be quickly coupled up to the load to be drawn, whether passenger coach or freight wagon. It is placed in front of and draws its load. It has a direct drive from the steam cylinders to the cranked axle of the driving wheels without the intermission of any gears, consequently it is economical, as no part of the power generated is lost in friction. The two Tractobile wheels, which are the front wheels of the complete automobile, are both driving and steering wheels, and each wheel is driven independently of the other by an engine with two cylinders, which cylinders are placed side by side and form a portion of the fork in which the wheel is pivoted. The main bearing of the engine is the cranked axle of the road wheel, and this wheel acts as flywheel for the engine, the entire weight of Tractobile, its fuel, water and about half the weight of vehicle and load giving the necessary adhesion of wheel to road surface. Having four cylinders the Tractobile is in consequence one of the smoothest, quietest running motors imaginable, and in consequence of this the Tractobile puts less strain on the vehicle body it is drawing than does even the horse it displaces. Obviously none of the torsional strains inevitable in most other automobiles are brought into play here. As the two front wheels are driven independently (though the forks in which they are pivoted are coupled for steering purposes), there is no need for a "differential" gear, which is one of the dangers of automobilism, as it causes much of the side slip or "skidding." Another point is that if by any chance an accident happened to one motor the carriage can yet get home, though at a slower speed, just as an ocean liner with starboard and larboard engines with twin screws can reach port even if one engine breaks down or a propeller is lost.

Any carriage can be fitted up, and turned into an automobile in less than an hour. When the shield which covers the mechanism and the boilers is in its place the outlines are graceful, and the original lines of the carriage are not materially departed from. There are many striking improvements, all covered by patents, embodied in the Tractobile, and we recommend that all interested correspond with the builders for further information.

PRESCOTT AUTOMOBILE MANUFACTURING CO.

(For illustration see "Latest Styles.")

The Prescott Automobile Manufacturing Co. is a new organization which has been operating on and perfecting a line of steam carriages, one of which is illustrated in this month's Hub. The weight of the one shown is 1,050 pounds; the wheel base, 66 in.; wheels, 28 in., 3 in. Fisk tires. The boiler is 16 in. fire tube, dry plate, 2⅞ in. bore, 4 in. stroke, link motion, 200 pounds nominal geared, 12-14 to 30; seamless copper tanks, 10 gal.; gasoline, 30 gal.; water tanks in front; weight, 1,050 pounds; 66 in. wheel base; 28 in. wheel, 3 in. tires, Fisk; 16 in. boiler, fire tube dry plate; 2⅞ in. bore X 4 in. stroke, link motion; 200 pounds nominal geared, 12-14 to 30; seamless copper tanks, 10 gal. gasoline, 35 gal. water tanks in front, compartments in water tank; 24 oz. copper on water tank; hand pump, cross head pump with large inlet, steam pump on compression tank, throttle lock, started from seat; compensating spur gear; generator and pilot light, special; combination slat, roller chains, double acting brake; reaches 12 and 16 gauge, telescoped arches, to gauge, 4 in. flange hubs, water tank gauge, Bundy lamps.

This company is a very responsible concern and has at its command practically unlimited means. The president, Mr. Prescott, has been a very successful manufacturer and financier in various large enterprises, and is known throughout the world as the manufacturer of the celebrated Enameline Stove Polish, etc. Frank T. Weston, the secretary and general manager, has been prominently identified with the bicycle business from its very inception, and during his connection with the Eclipse Manufacturing Co., of Elmira, successfully introduced and marketed the coaster brake principle, which is now recognized as a necessary adjunct to a real bicycle. In such hands, the Prescott auto must meet with success. The office of the company is at 99 Chambers street, New York City; factory, Passaic, N. J.

MOTOR BICYCLES.

About a year ago the Waltham Manufacturing Co., of Waltham, Mass., announced that they would manufacture a motor bicycle, and a few weeks later the Orient, America's first motor bicycle, made its appearance, and after a year's experience it stands to-day, not as an experiment, but a thoroughly practical machine. They believe that motor cyclists are not only better satisfied, but much more enthusiastic over their mounts than are the users of any other class of self-propelled vehicles, and the only reason they have not yet come into more general use is on account of the price. During the past year they have been able to standardize the parts, thus reducing the cost of manufacture, and will give to their customers the benefit of this in a lower price next season. Ordinarily the months of August, September, October and November are "dead ones" in the bicycle business, but they do not intend to allow this to be so with them, and instead of waiting several months to announce their 1902 prices, they propose to start in the new year on their 1902 basis the day after the old one is closed. August 1 is the beginning of their fiscal and agency year, and on that day they institute their next year's prices and terms as follows: Motor bicycle, fitted with 2¼ Aster or De Dion motor, $250; motor quadricycle, convertible into a tricycle,

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fitted with 2½ Aster motor, $375; runabout, fitted with 5 horse power motor, $350; Victoriette, fitted with 5 horse power motor, $1,200. The above are our 1902 prices, and will continue in force until August 1, 1902.

NEW AUTOMOBILE CORPORATIONS.

NEW MOTOR CARRIAGE COMPANY.

A NEW motor carriage company that will make vehicles different from those on the market has been incorporated at Columbus under the name of the Cleveland Motor Carriage Company, with a capital of $10,000. The incorporators are: F. D. Dorman, Charles D. Rabek, George W. Dunham, C. E. F. Alhm, and John T. Morris. The company will manufacture gasoline, electric and steam motors at No. 66 Chestnut street.

LANE MOTOR VEHICLE COMPANY INCORPORATED.

Papers of incorporation of the Lane Motor Vehicle Co. have been filed in New Jersey. The capital stock is $300,000. The incorporators named are William J. Lane, George Lane and M. Jones, of 493 Central avenue, Jersey City, N. J.

THE AUTOMOBILE CLUB OF AMERICA.

500 MILE CONTEST, NEW YORK TO BUFFALO, SEPTEMBER 9TH TO 15TH.

THE itinerary of this contest is:

First stage, from New York to Poughkeepsie, 84.4 miles; a hill climbing contest at Nelson Hill at noon.

Second stage, Poughkeepsie to Albany, 75.4 miles.

Third stage, Albany to Herkimer, 82.2 miles.

Fourth stage, Herkimer to Syracuse, 65.1 miles.

Fifth stage, Syracuse to Rochester, 7.2 miles.

Sixth stage, Rochester to Buffalo, 69.9 miles.

Total miles to be travelled, 464.2.

WILL OPEN A FACTORY IN PARIS, FRANCE.

MR. B. M. BAILEY, president of the American Wood Rim Co., recently returned from Europe, after perfecting the formation of the Cie Franco-Americaine des Jantes en Bois, which company will operate factories near Paris as a branch of the American Wood Rim Co., manufacturing the "Kundtz," "Plymouth," "Lobdell," "Fairbanks" and "Boston" wood rims and guards suited for all types of European tires for bicycles and light vehicles using pneumatic wire wheels. This factory will be equipped with the most modern devices and facilities, and the high quality which has served to popularize the company's rims abroad, in fact throughout the world, will be maintained both with respect to material and workmanship. The American company will send experts from their American factories to directly supervise the manufacturing departments in the French factory and American manufacturers of bicycles who are sending their products abroad are assured of a protection in Europe under the guarantee of the American company. Mr. George R. Ostheimer has been selected as managing director of the company's affairs in Europe and business offices have been opened at 41 Rue de l'Echiquier. The factories will be in position to commence deliveries on European business in December, and already a number of the largest European manufacturers, including M. Clement and M. Peugeot, have placed contracts for 1902 season, negotiations being now in progress which it is hoped will result in a volume of business sufficient to keep the new factory going to its full capacity, additional factories being on the ground to admit of immediately increasing its capacity to 5,000 rims and guards per day, if necessary, and the fact that the two principal manufacturers above referred to have decided to make wood rims a feature of their 1902 models is sufficient in itself to insure the ultimate popularity of wood rims on the continent and justifies the opinion that wood rims in Europe will eventually supplant, to a great extent, steel rims for bicycles and wire wheel vehicles, and become as popular as they already have in America. Mr. Lobdell, vice-president of the company, leaves for Europe in September to direct the installation of the machinery and put the factory in modern working order.

The same guarantee covering these rims in this country will be observed by the European branch so that manufacturers shipping wheels abroad fitted with these rims are protected in Europe.

Items of Interest.

NEW ORGANIZATION OF CARRIAGE MEN.

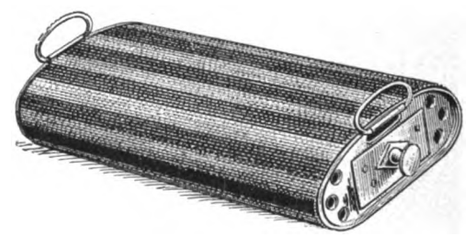
CINCINNATI, the greatest manufacturing point in the whole world for vehicles, is to have that fact impressed upon its people and everybody in general this fall. That the industry is colossal is indicated by the fact that last year 125,000 four-wheeled vehicles were turned out in this city, and this year the output will reach 130,000 or 140,000, according to estimates by manufacturers. On October 19 the National Association of Vehicle Manufacturers meets here, when from 8,000 to 10,000 visitors will be entertained. In November the Tristate Dealers' Association meets here again. In connection with it will be conducted an exposition of finished vehicles from all over the country, as well as of furnishings, materials, etc.

In anticipation of the great doings this fall the vehicle manufacturers of Cincinnati have formed the United States Vehicle Association. Members say it is for local industrial improvement and social features alone, and not with a view to fixing prices. The association was incorporated by G. H. Degolyer, F. J. Enger, A. R. Scovill, A. J. Brunsman and Henry Rattermann. Rattermann is president. There is no capital stock. The association is independent of the Cincinnati Carriage Makers' Club, which includes supply houses and accessory trades in its membership.

"The purpose of the association," said Rattermann, "is mostly social. When the National Association and the Tristate League meet here we want to be properly organized to entertain. We also expect to co-operate with the Industrial Bureau to get new factories in our line located in Cincinnati. We will co-operate with the bureau to get the F. A. Niter Co., of Augusta, Ky., that employs 150 men, located here, as well as an automobile factory that is looking for a site, and an axle concern that the bureau has been after. Cincinnati is the greatest vehicle center of the United States, and we are in favor of keeping it so. There is also opportunity for our organization to secure better freight rates from railroads, and numbers of incidental benefits." The number of employees in Cincinnati vehicle factories proper is between 9,000 and 10,000. There are a great many manufactories and dealers in accessories, such as springs, axles, wheels, varnishes, paints, cloths and furnishings, which will run the number of employees nearly as high again. Flint, Mich., is Cincinnati's closest rival, but it is far behind that city in the extent of the industry.

LEHMAN BROS.

THE summer months are passing rapidly, and the time will soon be here when provision will have to be made for protection against the cold weather, and one of the necessities in that connection is a foot warmer, one that won't burn the foot for a little while and then be of no value, but one that will give off a steady, moderate



LEHMAN CARRIAGE AND SLEIGH HEATER.

heat for hours without additional fuel, and when required the fuel can be heated and replaced in a short time. The Lehman heaters occupy little room, are neat in appearance and durable. The cost is small as compared with the comfort they impart. They are equally serviceable for carriages and sleighs, and are as much a necessity now as are robes, blankets, etc. For further information address Lehman Bros., 10 Bond street, New York City.

A PAPER announces that it will publish original poetry on the same terms as advertisements.

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LOCK OUT.

More than 2,000 carriage workers were notified by seven shops in Cincinnati, on August 18, that their services were not needed, and that the places will open September 3 as non-union shops. The following factories closed were: Ratterman & Luth, Anchor Buggy Co., Lion Buggy Co., Sayers & Scovill, George Enger Co., Hukay Buggy Co., and the Sechler Carriage Co. Hundreds of girls and boys also will be thrown out of work. Nine factories here were combined recently under one incorporation, and announced that they would employ whom they pleased, fix their own wage scales, settle the matter of apprentices, and work piecework and contract system. At the American Buggy Co. and the Brown Carriage Co. the owners discharged leading officials of the Carriage Workers' Union and replaced them with non-union men. The 300 employees of these two firms struck the Wednesday before submitting a proposal to the owners, who referred them to their recent circular, stating that they would stand by it.

ENLARGING THE PLANT.

The Granger-Hayden Carriage Co., of Jackson, Mich., are building large additions and making many extensive improvements to their plant, and by November 1 will have one of the best arranged and equipped carriage plants in the country, with a capacity of 12,000 jobs per annum.

NICKEL PLATED ANVIL.

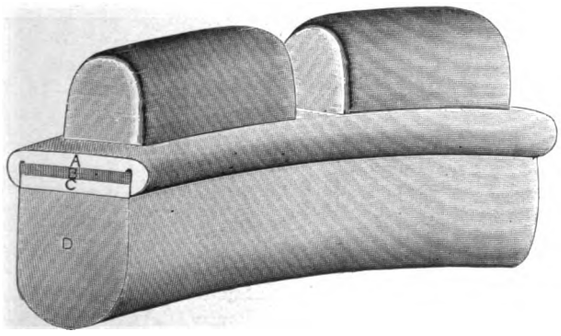
Hay-Budden Manufacturing Co. of Brooklyn, N. Y., have forwarded us a neat paper weight, a miniature anvil, nicely finished and nickel plated, a useful article and a reminder of the fact of a solid wrought anvil having been first made in America.

FIRE IN ALLEGAN, MICH.

The carriage factory and repository of E. B. Born, at Allegan, Mich., was totally destroyed by fire on August 17th. This was the third time that Mr. Born has suffered loss by fire, first in 1884, then again in 1896. In previous years Mr. Born carried no insurance; this year his loss is upwards of $20,000; insurance $8,500. Mr. Born announces that owing to advancing years and failing sight he will not rebuild.

NOW HANDLE THE HALL SECTIONAL RUBBER TIRE.

It is reported on good authority that the Consolidated Rubber Tire Co., of 40 Wall street, New York City, have purchased from Mr. Frank E. Hall, of Boston, the right to manufacture and sell Mr. Hall's celebrated Sectional Rubber Tire. It is conceded that this tire



HALL SECTIONAL TIRE.

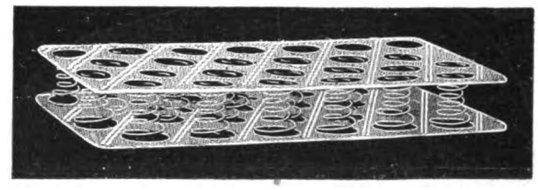
has exceptional merit for heavy automobiles. Some of the special points are: they take less current or power, they do not slip, a higher speed can be attained, they ride equal to pneumatics, are more durable than either solid or pneumatics and will not come off.

DESIGNED BY MARTIN GOBEL.

The large passenger vehicle, illustrated in August Hub, and built by Caley & Nash, of Brighton, N. Y., was designed by the late Martin Gobel, whose decease was announced in the same number.

THOMPSON PERFECTION CUSHION SPRING.

The Thompson perfection cushion spring, manufactured by F. H. Thompson, Portland, Me., is one of those improvements in the tramway line for carriages that merits more attention than is generally given to matters pertaining to that branch of the carriage. In this spring Mr. Thompson has secured an elasticity that insures comfort, a degree of strength that gives durability and a foundation that makes the building up of the squab that forms the top an easy matter for the practical trimmer. These springs are made up in two grades, the first being the "Perfection." This is being used



PERFECTION SPRING.

largely by manufacturers of first-class carriages and automobiles, and numerous tests have demonstrated the fact that the springs will not get out of place, neither will the cushions or squabs lose their form. The "Eureka" and the "Luxury" have the wearing and other good qualities of the "perfection," but have a different frame, which enables the putting them on the market at a lower price than the "perfection." There is no place where a spring cushion can be used to an advantage where this spring will not give satisfaction. Its construction is such that it will withstand the hardest usage; at the same time it is elastic and true to its original form. The inventor is a practical trimmer, and he knows just what is wanted to make a perfect cushion, and he has givevn to the trade the result of an intelligent effort in that direction. The springs are indeed a luxury for a carriage, wagon truck, chairs, railroad car cushions, etc., and too much cannot be said in their praise. With them "truth makes all things plain."

CARRIAGE AND AUTOMOBILE FITTINGS.

The Jamesville Manufacturing Co., of Jamesville, N. Y., have been busy during the summer months in equipping their plant with the newest and best machinery for the manufacture of the well known Jamesville Carriage Wheels, Carriage Axles, etc. They feel warranted in saying that they now have as fine a line of goods as can be produced, and the host of satisfied customers seems to carry out the highest claims of the company. Now that their facilities are greatly increased they are in condition to extend their sales, and ask for trial orders from parties not heretofore on their books. Their old customers do not need any better proofs than they have had. See the company's advertisement on another page.

ANTOXIDE.

Harrison Bros. & Co., Inc., of Philadelphia, the well known paint and varnish manufacturers, have put on the market an anti-rust paint, which they designate as Antoxide, a preparation specially prepared for painting iron, whether exposed to the elements or interior. This latter fact makes it of interest to all who use machinery in the factories as a protection from rust, on such parts as boiler fronts, steam pipes, as it is not affected by heat, making it as valuable for such uses as it is for bridges, etc. It is furnished in black and colors. Write for the company's pamphlet, giving details of this material.

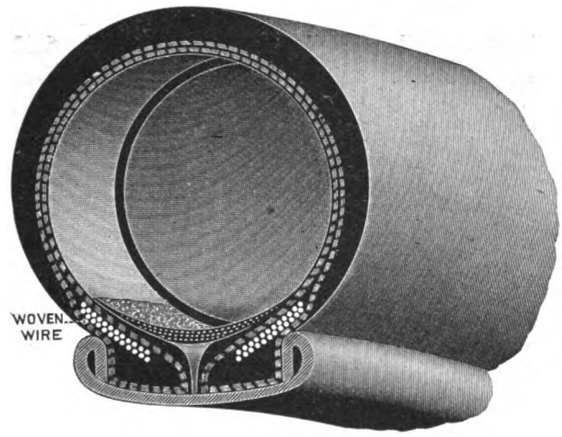
CORTLAND WELDING COMPOUND CO.

The Cortland Welding Compound Co., of Cortland, N. Y., has built up a large trade in the Dominion of Canada, in addition to its extended business on this side of the line. Not only are the large carriage manufacturers using it but the compound is handled by the jobbing trade. The fact that with it steel can be welded as easily as iron is fully understood and hence its general popularity among iron workers there as well as here.

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THE GOODYEAR DETACHABLE PNEUMATIC TIRE.

A NEW tire for carriages and automobiles that is rapidly coming to the front is the Goodyear Detachable Pneumatic, manufactured by the Goodyear Tire & Rubber Co., of Akron, O. The idea is in itself unique, and its success is recorded by durability, resiliency and ease of repair of this tire. Imbedded in each side of the tire, just at the edge of the rim, is an endless piece of woven wire. When the tire is inflated the wire is expanded sideways and contracts around the rim so tight that the tire is absolutely immovable.



GOODYEAR DETACHABLE TIRE.

It cannot rim cut, for rim cutting is caused by the friction of the tire on the edge of the rim, and this tire is tightest at that point. The tire fits a special rim which is supplied by the manufacturers, the Goodyear Tire & Rubber Company, this rim being the smallest, neatest and lightest weight steel rim used for this purpose. These rims are made to take either 1¾ or 2 inch tires for the same sized rim. The tire has three times the resiliency of a single tube, as it will be noticed that the air chamber is all on the outside of the rim. In construction, a specially woven fabric of the finest Sea Island cotton duck is used, together with fine selected, pure Para rubber. The rubber is forced through from both sides of the fabric, thus covering every strand, and vulcanized together homogeneously. In recent tests by a large manufacturer of motor cycles this tire was four seconds faster in the mile than any other tire. It is made in all sizes from 28 x 1¾ inches up to 36 x 5 inches for automobiles.

CATELY BUGGY PROP SPRINGS AND LEVERS.

To the many who are using the Cately buggy prop spring and lever, manufactured by Cately & Ettling, Cortland, N. Y., a short history of its introduction and success may not prove uninteresting. The patent was issued in 1888. In the fall of 1889 Mrs. Alice M. Ettling, daughter of the patentee, went to Buffalo to exhibit it in the international fair, expecting her father to follow, but owing to a severe illness he was unable to do so. After exhibiting it in Buffalo Mrs. Ettling took it to the Toronto, Canada, Exposition. While there she leased the Canada patent to the Guelph Carriage and Hardware Co., who have controlled it in the Dominion since that time.

The springs soon became so popular that it was difficult to sell a top without them and that success has caused other competing patents to be put on the market. There are many thousand pairs of these springs sold each year in Canada, and at the Pan-American the Canadians are the most interested visitors. We do not know of another woman who has gone from the States and leased a patent. Sales at home and abroad are heavier than they were last year, and the list of customers is increasing all the time. Their exhibit receives considerable attention at the Pan-American considering their poor location.

VEHICLE HUBS AND HEALTH.

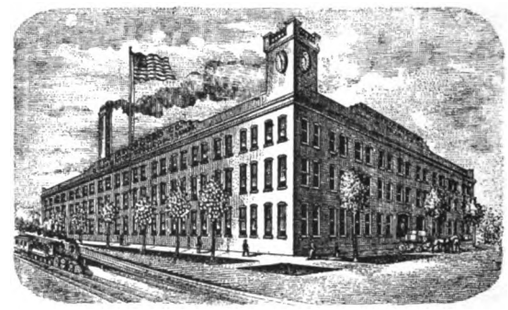
THE Steel Cushioned Hub Co., Inc., of Worcester, Mass., are sending out a little pamphlet in which the question of noise and health are discussed, and from the conclusions therein they draw a distinct connection between the vehicle hub and public health. Send for a copy.

NEW CARRIAGE CO. AT PONTIAC, MICH.

PONTIAC, as a buggy center of the country, is becoming more famous each year, and its already large list of factories in this line has been augmented by the organization of the Standard Vehicle Company of Pontiac, Mich. The articles of association were prepared and have been filed at Lansing. A board of directors has been chosen and the following officers elected: President, H. C. Kudner; vice president, H. E. Pierce; secretary, L. W. Nichols; treasurer, F. L. Perry. The directors are the four officers and J. B. Draper of the office force of the Eastern Michigan Asylum. The capital stock of the company is $35,000, every cent of which was paid in in cash.

THE MEYERCORD CO., INC.

THE Meyercord Co., of Chicago, Ill., claim to supply three-fourths of all the transfer ornaments used in Canada. This is due in part to their ability to produce special designs in a few weeks'



PLANT OF MEYERCORD CO., CHICAGO, ILL.

time, whereas the importing houses require about as many months. They carry a very heavy line of goods in stock and find little difficulty in supplying almost anything in the line of transfers that the trade requires. The illustrations herewith shows their Chicago factory, and its size gives a pretty good idea of the extent of the business and the prosperity of the company, a prosperity due to the



CHARLES H. JAGGER.

character, quality and price of their product. Their trade has grown to such an extent that their transfers now find a market to every part of the civilized world. Their Canadian representative, Charles H. Jagger, whose portrait is published herewith, resides at Hamilton, Ont., and has hosts of friends throughout the Dominion.

SEND THEM YOUR CATALOGUES.

THE Automobile Co. of America, Marion, N. J., ask that manufacturers of materials send catalogues to the purchasing department of Automobile Co. of America, Marion, N. J.

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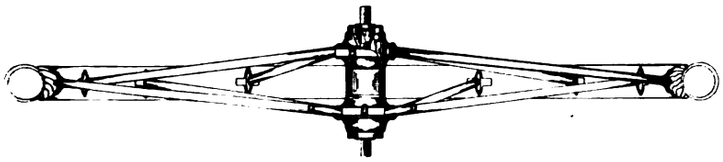
CUSTOMS DECREES IN MEXICO.

CONSUL CANADA, of Veracruz, May 6, 1901, states that an executive decree has been issued by the President of the Republic of Mexico, authorizing collectors of customs at the principal ports on the Atlantic and Pacific coasts to grant permission to vessels (without restriction as to nationality or tonnage) to proceed with cargo to, and discharge same at, points on the coast of Mexico where no custom houses exist or custom officers are stationed. This decree, says the consul, has been issued for the purpose of aiding commerce and accommodating the inhabitants of the lesser important places. If the cargo is of Mexican origin, or has been naturalized by having once paid duty, there is no limit to the amount, and the vessel may carry to its full capacity; but where the cargo is foreign, the amount is fixed by the duty on same—that is to say, the duty on the cargo must not be more than $2,000 Mexican currency.

The consul adds that another executive decree has been promulgated, which exempts consular invoices covering coin of any country, or bank notes of any of the banks established under a state or federal law in the Republic of Mexico, from the consular fee, provided no other merchandise is covered by said invoice.

THE MERCER ADJUSTABLE TUBULAR SPOKE.

A WHEEL that its manufacturers claim to meet all the requirements of the ball-bearing axle, "pneumatic" tire, and the motor vehicle, combined, is the Mercer Adjustable Tubular Spoke Wheel; light and graceful, coupled with great strength, especially to stand the lateral strain of the motor carriage and speed wagon. The rim can be as readily trued and adjusted as a wire wheel, but has none of the bad features of the latter. It is stronger than the wood wheel, but much lighter in appearance, and is more elastic, as the spokes are cushioned on rubber. The spokes are tubular, and of an oval shape, combining strength and lightness, coupled with this is the fact that if one should be broken a new one could be inserted



MERCER ADJUSTABLE TUBULAR SPOKES.

with an ordinary wrench without even removing the wheel from the carriage or tire from wheel. The rim of wood is attached to the spokes by means of metal shoulders, entirely obviating the risk of split rims. The company will make a specialty of sulky and speed wheels, dimensions of which are 28 inch by 30 inch high; 18 spokes, ⅜ by ⅛ inch at hub, and ¼ inch by ⅛ inch at rim; hub of steel; weight 4 lbs. All other sizes and styles to be manufactured by license. For further particulars address F. J. Mercer, Hyde Park, Mass.

CARRIAGE AND TIRE BOLTS.

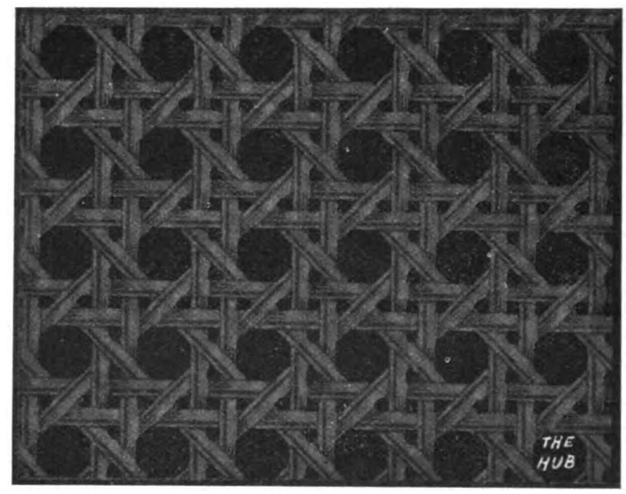
THE Kirk-Latty Mfg. Co., of Cleveland, O., manufacture tire, sleigh and carriage bolts, copper and iron rivets, trimmers and other tacks, clout and finishing nails, together with various other articles suitable for the carriage shop. Their illustrated catalogue will be found a useful reference book and we advise all interested in any of the articles mentioned to send for a copy.

NEW PARTNER ADMITTED.

ON August 12th, 1901, The Model Carriage Co., located at 103, 105, and 107 Milan street, corner Commerce avenue, Houston, Tex., admitted Albert W. Mitchell into partnership, and increased their amount of capital. The style name of the firm will remain unchanged. They will continue to conduct a complete carriage repairing and manufacturing establishment and rubber tiring plant, and in addition will handle a line of factory-made business and pleasure vehicles. They report business in their section to be entirely satisfactory, and THE HUB predicts a bright future for them.

TRANSFER WICKER AND WILLOW WORK.

PALM, FECHTELER & Co., of New York, have prepared a line of wicker and willow transfers that will prove of value to builders of carriages and automobiles. They have made these up in colors not heretofore offered to the trade, such as shown, red and blue. They



TRANSFER CANE WORK.

also furnish light colors as heretofore. In all probability there will be a sharp demand for willow work next season, and builders should obtain lines of samples of these transfers to show to buyers. A letter addressed to the company will bring you special information regarding the goods and prices.

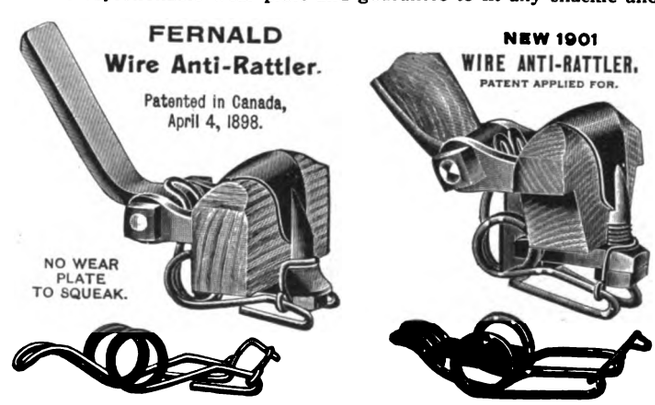
BUSINESS DIRECTORY OF MONTEREY.

CONSUL-GENERAL HANNA writes from Monterey, July 31, 1901:

"It will no doubt be of interest to the many merchants and manufacturers in the United States, who are seeking to extend their trade throughout Mexico, and write the consuls for lists of firms selling certain kinds of goods, to know that there has just been published a classified directory of the city of Monterey, in which are given the names of all commercial houses and the kinds of business in which they are engaged. The directory can be obtained by sending a New York draft for $5 (United States money) to the Sonora News Company, Monterey, Mexico, or to the publishers, Ross-McDonell Advertising Co., Laredo, Tex."

FERNALD MFG. CO.

THE Fernald Manufacturing Co. of North East, Pa., have put out their 1901 wire anti-rattler, for which they claim special advantages over all others. On account of the large coil they get elasticity and a spring that will last longer than a small coil. The shape of the plate draws the coil to the inside when attached. They also leave off the objectionable wear plate and guarantee to fit any shackle and

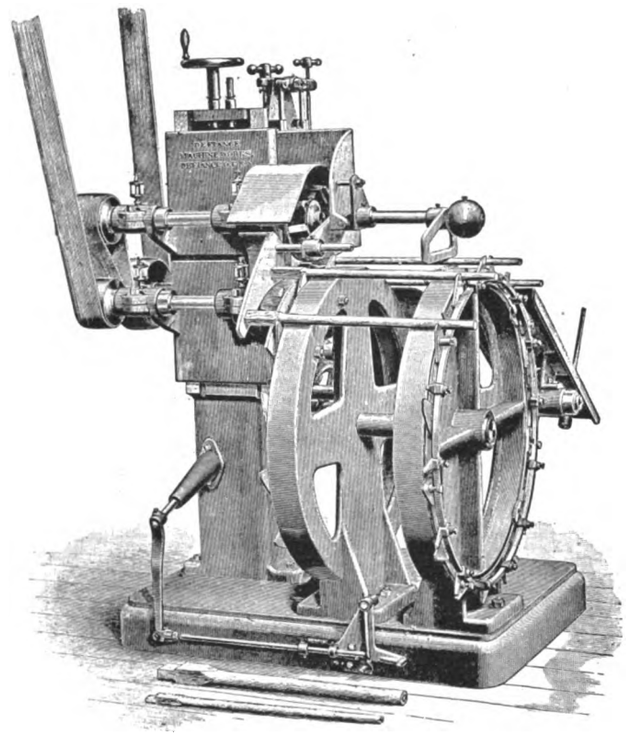


to be a perfect anti-rattler. They also call attention to the Fernald quick shift, a high tempered spring that is easy to attach and a perfect attachment, one that will wear well and always fill all demands made upon it. Send for circulars and see their advertisement in this month's HUB for further information.

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AUTOMATIC DOUBLE SPOKE TENONING MACHINE.

THIS engraving represents an Automatic Double Spoke Tenoning, Mitering and Pointing Machine, which has been designed for the use of spoke, wheel and wagon manufacturers to dress the ends of spokes to fit the mortise in the hub. It is extremely simple in its operation, and well calculated to cover every requirement in this line. It will handle either small or large spokes, cut plain tenons, or tenon, miter and point a Sarven spoke at one pass through the machine. All the parts of this machine are so strong and well made that absolutely true and uniform work can be expected of it at the rate of 25,000 spokes per day. The column is heavy and mounted upon a broad base. The saddles supporting the cutterhead spindles are gibbed to the column, having a vertical adjustment by hand-wheel to regulate the thickness of tenon. Both heads can be adjusted vertically together for regulating the position of the tenon with the spoke without altering the adjustment for thickness of tenon. These several adjustments can be made while the machine is in motion. The feeding reels are driven by cut gearing and a friction clutch connected by a foot pedal which enables the operator to stop or start

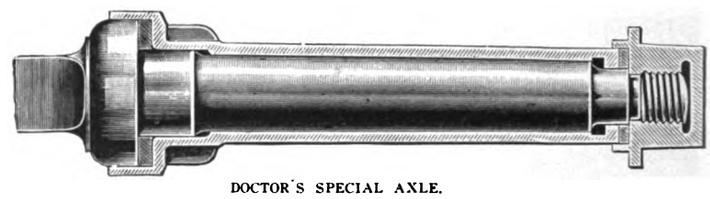


AUTOMATIC DOUBLE SPOKE TENONING MACHINE.

the feed instantly from the working side of the machine. The movement of the reels, being smooth and positive, insures a steady motion and a true cut. An ingenious equalizing device is employed which receives and presents the spokes to the cutters so that the tenons are always formed exactly in the center of the spoke, regardless of inequalities of thickness or irregularities in turning. The expanding cutterheads of novel construction are mounted upon heavy steel spindles. They are 9 inches in diameter, and so arranged that by turning a single key the beveling knives can be adjusted instantly for bevels of different thicknesses. They are equipped with shear cutting knives and saws to form the shoulder of the tenon. Oak or second-growth hickory spokes can be tenoned smooth and to the proper size without tearing. A shield surrounds the upper head, preventing any possible chance for the operator to become injured. The spokes to be operated upon are simply placed upon the reels at a slight angle to secure the proper dish when driven into the hub and automatically presented to the action of the cutters, and discharged automatically into a rack at the rear portion of the machine when they are completed. This machine is capable of making any shape of tenon desired on common, Sarven, Warner or sharp-edged spokes at the rate of 25,000 spokes per day, with an inexperienced operator to handle it. The Defiance Machine Works, Defiance, Ohio, U. S. A.

DOCTOR'S SPECIAL AXLE.

THE Dalzell Axle Co., of South Egremont, Mass., are noted for the many good things that they produce in the axle line, one of these they call the Doctor's Special. They have given this axle a thorough trial during the past eight years, and now offer it to the fine trade with perfect confidence, claiming that it is the best and finest buggy axle ever offered to the public. The box is made of solid wrought iron, bored out so as to have a bridge and oil chamber in the front end. It gives a broad, smooth wearing surface for

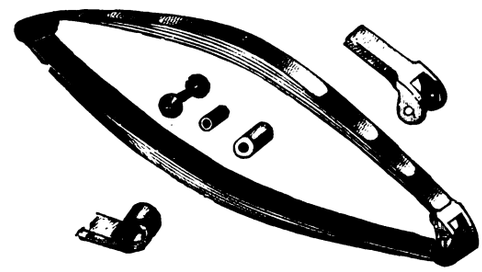


DOCTOR'S SPECIAL AXLE.

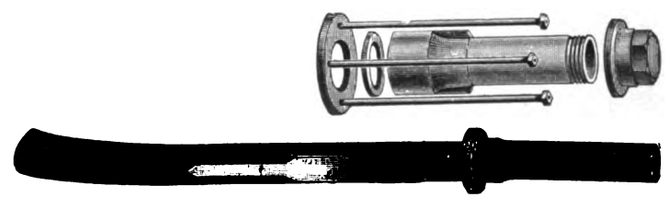
the leather washer in the nut. They call your attention to that valuable feature, the oil chamber, which has proven so satisfactory in their improved collinge box. The collar having a broad wearing surface and wide washer, will run for several months without changing or removing the leather washers; desirable for those using a carriage constantly, and who care to have a fine-running job that will not rattle and seldom requires oiling. The axle is made from bar of sufficient size to form the collar. The material is forged by drawing down in dies, which gives the desired shape of the arm and bed. This method makes a stronger and more reliable axle than can be obtained by using small stock and upsetting the collar. The quality of material and workmanship is the best possible to obtain, and the fit and finish are all that can be desired.

GANANOQUE SPRING & AXLE CO.

THE Gananoque Spring & Axle Co., of Gananoque, Canada, manufacture full lines of carriage springs and axles. The two illus-



trations herewith show a mail patent axle and one of the styles of springs made by them. A notice of their plant appears in connection



with our general review of the industries of the Dominion of Canada this month.

STANDARD VARNISH WORKS.

THE products of the Standard Varnish Works, with offices at 29 Broadway, New York; 2,620 Armour avenue, Chicago; 23 Billiter street, London, England, we recommend to our Canadian friends. The splendid merit of the Standard Carriage Varnishes, as regards free flowing properties, lustre and durability, is recognized by many of the largest and finest carriage builders all over the world. A long and careful study of the wants of the trade, together with unceasing care and vigilance in the manufacture of these Standard goods, added to the unexcelled facilities and superb equipment of the "largest varnish works in the world," have placed the Standard Varnish Works in the front rank as a representative varnish manufacturing concern.

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OFFICIAL ANNOUNCEMENT.—TECHNICAL SCHOOL FOR CARRIAGE DRAFTSMEN AND MECHANICS.

PROSPECTUS.

Autumn and Winter Terms, 1901, 1902.

YOUNG MEN'S INSTITUTE, No. 222 Bowery, New York.

Instructor, ANDREW F. JOHNSON.

THE classes in carriage drafting and construction, carried on under the auspices of the Carriage Builders' National Association, will open on the first Monday in October. Autumn term closes at Christmas. Winter term opens the first Monday after New Year's Day and closes the last Friday in April.

REQUIREMENTS FOR ADMISSION TO THE DAY OR EVENING CLASSES.

1. The applicant must be engaged in the manfacture of pleasure or business vehicles.

2. He must be sixteen years of age or more.

3. Be able to speak, read and write English, and to write a fairly good business letter.

4. Have a knowledge of arithmetic sufficient to solve problems in proportion, and also in square and cube root.

Some knowledge of geometry is also desirable, but it is not required on entering.

Examinations for admission will take place the two weeks preceding the opening of the term; or at such time as may be arranged, to accommodate distant pupils.

Examinations will be both written and oral.

DAY CLASS.

This class is to accommodate pupils who wish to devote their whole time to the study of carriage drafting. This class will meet each week day except Saturday during the term. Hours: 9 a. m. to 4 p. m. Drawing boards and paper will be furnished without charge to the pupils. Tuition for autumn term, $30.00. Tuition for winter term, $40.00. Payable in advance. Day class is limited to ten pupils.

EVENING CLASSES.

Prices for the two terms, three nights each week, viz.: Monday, Wednesday and Friday, from 7:30 to 9:30 o'clock, $6.00.

Without additional expense, the pupil will be entitled to the following privileges, namely: the use of a reading room, conversation room and library, scientific and medical lectures, concerts, and other entertainments and baths. By the additional fee of $3.00, the pupil will also be entitled to the use of one of the best gymnasiums in the city, including full apparatus, baths, bowling alleys and medical advice as to suitable exercise.

All communications relating to the Carriage Builders' Classes should be addressed to Andrew F. Johnson, instructor-in-chief.

COURSES OF INSTRUCTION.

The pupils will be divided into three distinct classes, namely: the "Introductory or Free-Hand Class," the "Class for the Study of Carriage Geometry," and the "Class for Scale and Full-Size Working Drawings."

Early application is necessary, as desk-room is limited to thirty pupils.

There will be no charge of any kind beyond the regular fees specified above, excepting the cost of any necessary drawing instruments and materials which the pupil does not himself provide.

At the close of the term "Certificates of Graduation" will be given to such pupils of the day and evening classes as pass the necessary examinations.

The following conditions govern the graduation of pupils:

No pupil will be entitled to a Certificate of Graduation unless he can pass, in the judgment of the Trustees, a satisfactory examination in all the branches taught. He must, upon examination, evince a thorough knowledge of geometry as applied to carriage-building, known as the "French Rule of Drafting"; show facility in making free-hand drawings, be able to make scale and full size working drawings of carriages, be able to give the proper sizes of the different parts of light, medium, and heavy carriages, and be able to write, clearly and correctly, orders for such parts as are made by special manufacturers, such as wheels, axles and springs. A knowledge of perspective and colored drawings is also desirable.

These examinations will take place in the school rooms each year at the close of the winter term, and will be conducted by the Board of Trustees.

Five hundred and fifty-eight pupils have joined the evening class since it was started in December, 1880, many of whom now hold responsible positions.

Instruction will also be given by correspondence to the employees of carriage builders and members of the accessory trades, at their homes, by means of the so-called "Chautauqua System."

This system consists in giving instruction to out-of-town pupils through the mail, by Lesson Paper, on making free-hand, geometrical, scale and working drawings, each paper calling for responses in the form of hand drawings or written replies—which are afterwards examined and corrected by the Instructor, Mr. Andrew F. Johnson.

Three terms are required in order to complete the full course of corresponding Lessons, which are eighty-three (83) in number, as follows:

On the receipt of tuition fee, all lesson papers for the term will be mailed to the pupil at once, in order that the pupil can see to what the lessons are tending, and any pupil who has finished the study of the full term lessons will, by sending tuition fee for the next term to the Instructor, receive the whole number of lessons for that term.

This class is kept open during the entire year, and pupils may join at any time.

There are twenty-nine lesson papers in first term; twenty-five lesson papers in second term, and twenty-nine lesson papers in third term.

Written examinations will be required at the end of each series of lessons, in order to test the progress and proficiency of pupils, and at the close of the course, diplomas will be awarded to those deserving such recognition.

The primary class will be occupied chiefly with the study of free-hand drawing, which the committee deem of foremost and vital importance to all mechanics; the "Intermediate Class" and "Advanced Class," for the study of carriage geometry as applied to carriage construction, popularly known as the "French Rule."

All employees of manufacturers of carriages, wagons and sleighs, and the trade accessory thereto, doing business within the United States and Canada, are eligible to membership in these classes of "Corresponding Pupils," the only conditions of entrance being: First, a letter of recommendation from the employer; and second, the remittance in advance, by post-office money order, of $1.00 for each apprentice under twenty-one years of age—or $2.00 for journeymen and others—which will cover all fees for instruction during the term.

Each pupil will be expected to provide himself with necessary drawing instruments, paper, etc., and to prepay postage on all communications sent to the teacher.

Works of reference and text books will be recommended to pupils who show the need of such help; and, if desired, these, as well as drawing instruments, paper, etc., will be supplied at cost price by the teacher.

The total number of pupils who have joined the corresponding class up to date is 1,226, residing in thirty-one States, two Territories, Mexico, Canada, Africa, Australia, England, and New Zealand.

By order of the School Committee acting for the full Board of School Trustees representing the Carriage Builders' National Association.

FRANKLIN MURPHY, *Chairman.*
W. W. OGDEN,
GEORGE H. BABCOCK,
N. ALBERT HOOKER,
E. M. HOTCHKISS, *Secretary and Treasurer.*

HAVE CONSOLIDATED.

WE are informed that the Standard Leather Co., of Cheswick, Pa., and the Martin Lappe & Sons' Oak Leather Co., of Allegheny City, Pa., have consolidated their interests and in future will be known as the Standard Leather Co., Allegheny City, Pa. This consolidation will include two plants in Allegheny City and the Cheswick plant, giving the new company capacity of 2,000 hides per week, or about twenty times the output of the old Standard Leather Co. The new company will manufacture a full line of carriage furniture, shoe and saddlery leather in patent and enameled stock, enabling them in future to fill all orders promptly with standard goods. The management will remain in hands of the same parties formerly with the Standard Leather Co., with the addition of two of the Lappe brothers, who are both practical in the leather business. The capital will be $400.000. The company's office is at 296 Spring Garden avenue, Allegheny City, Pa.

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Trade News.

BY UNCLE SAM.

ALABAMA.

LA FAYETTE—Tucker, Willingham & Co. are having a large house erected at the rear of their stores as a buggy and wagon repository.

CONNECTICUT.

WALLINGFORD—It is reported that E. S. Parmelee, who now operates a wheel shop in Thomasville, N. C., has made a proposition to the Wallingford Board of Trade looking towards the organization of a company to engage in the manufacture of wagon and carriage wheels in Wallingford, making the North Carolina plant, owned by Mr. Parmelee, a part of the organization. Mr. Parmelee is a Wallingford man.

George P. Clark has turned the business of his rubber wheel and truck shop into a joint stock corporation, to be known as the George P. Clark Company. His son, George E., will be admitted into the firm. The capital stock will be $20,000, divided into 200 shares of $100 each.

DELAWARE.

LAUREL—Fire destroyed the large carriage factory and funeral establishment of ex-Speaker Emory E. Riggin & Son on August 7. Emory Riggin rushed into the office, was taken with an epileptic fit, and fell into the flames. His rescue was attempted, but was impossible.

GEORGIA.

WAYCROSS—Mr. W. F. Crawley announces to the public that his buggy emporium is now open for business. For some time he has been receiving his stock and making his place ready. His stock is about completed, and he now offers for sale a full line of the famous Barnesville buggies. He also has on sale the Tyson & Jones vehicle and the celebrated Owensboro buggies and wagons. A full line of the best makes of harness will also be kept in stock.

MINNESOTA.

ST. PAUL—The Scribner-Libbey Company will, next month, move into its new building at Fifth and Fort. Its building at Fifth and Washington will be taken by the Thomson & Ege Carriage Company.

TENNESSEE.

FLAKVILLE—Flowers & Son is the style of the firm that is building a large carriage factory here. The foundation has already been laid, and they expect to be ready for business soon.

INDIANA.

BROOKVILLE—Messrs. O. C. Moffit and W. D. Holly of Richmond, Ky., assumed the management of the carriage factory Monday morning (July 29). These gentlemen come here with fifteen and sixteen years' experience and with high recommendations as sober, industrious men and skilled workmen. The company has not busted up, as has been reported in town and county, nor has it sold out. Like any new factory it has to get a start, and much depends on the interest taken by the employees. For the stockholders we would say that the information gained on the street is not reliable. To the meddlesome tongues that are in no manner interested in the concern we simply say keep on wagging and make it as difficult for the institution in your town as possible. M. P. HUBBARD, Treasurer.

INDIANAPOLIS—J. S. Starr, proprietor of a carriage factory at Decatur, Ill., will move his plant to Indianapolis if he can secure a suitable location. He wants about 40,000 square feet of floor space, within a half mile of the principal freight depots. He has offers of sites in Columbus and Cincinnati, but prefers Indianapolis.

HAMMOND—Fire on August 2d consumed three large manufacturing plants, causing a loss of over $100,000. The plants destroyed were the Simplex Railway Appliance Company, Western Rawhide Tanning Company, and the Hammond Buggy Company. A broken oil pipe in the furnace of the Simplex factory started the blaze. Over 500 workingmen are thrown out of employment.

LEBANON—Fire starting in the dust box near the stack, destroyed the plant of the Lebanon novelty works, on July 23. The building destroyed contained about five car-loads of finished material ready for shipment, consisting largely of handles and wagon stock of all kinds. J. G. and S. H. Wilcox, the proprietors, estimate their loss from $10,000 to $15,000. The insurance amounted to but $3,500.

IOWA.

DES MOINES—While the Kratzer Carriage Company is behind in its orders they keep rapidly at work. Last week they received a car-load of steel from Johnston, Pa., also a car-load of the shafts and poles of black hickory from Memphis, Tenn. The company has let contracts for a 66x94 foot addition to its factory on First and Market streets. Brick for the new structure is being hauled in, and its old frame building now occupying the property to be improved will be taken down. The addition will be two stories high with a basement, the same as the present buildings. It will be built between the two parts of the factory as it now stands, and will give the company an entire quarter block, including about 80,000 feet of floor space. The improvement will cost about $10,000.

The plant and stock of the Shaver Carriage Company, of East Third and Locust streets, has been purchased by Messrs. Joseph Adams, A. E. Adams and W. T. Shaver, and the business will be conducted hereafter under the firm name of Shaver, Adams & Co. It is the intention of the new management to enlarge the plant and increase the building capacity, building the carriage factory up into one of the first institutions of the city.

GRAND JUNCTION—Fire destroyed, in addition to other buildings, on July 20th, the large wagon and carriage factory of J. Mattison & Co.; insurance light.

MAINE.

HOULTON—Thos. D. Hay and Geo. Law, of this town, have recently opened a shop in the building near Clark's Hotel, where they are prepared to do all kinds of carriage, sign painting, etc. Both are experienced workmen.

PORTLAND—The F. O. Bailey Carriage Company, at their carriage factory at Morrills, are now busy upon sleighs. The output of this firm has a local distribution from the Portland store and many are shipped direct from the factory to distant points.

MASSACHUSETTS.

AMESBURY—Not for several years has the carriage business of this town been as brisk during the summer months as is the case this year. Inquiry of a prominent citizen well acquainted with the conditions of the trade revealed the fact that this improvement was largely due to a change in the line of work that has been formerly carried on here. The manufacturers have in the past devoted much time to the building of light work for the South and West. This is giving way to heavier work, such as depot wagons, cabriolets, rockaways, etc. While shipments of a factory will not equal former times, the value of the business done will hold as good if not superior to the days of lighter work. By this he did not mean to say that light work would not be built here. This will be continued, said he, as long as there is any demand for it, but the specialty will be more for heavier work, which is the most profitable in the end. To compete with the West is a difficult matter for several reasons. A great deal of the lumber and iron comes from that section, and to pay freight on the raw material to the East and then freight back again on the finished carriage gives the New York State and Western manufacturer an advantage over those of this place. With the building of heavy work and runabouts, a field nearer home is secured, in which to make sales. Amesbury carriages have always been noted for their fine style and elegant workmanship, and with a higher grade of work, there should be an increased trade.—*Newburyport News.*

NEW BEDFORD—Brownell and Burt, carriage builders, are negotiating for a lease of the property on Rock street, recently vacated by Kirby's stable. If this firm leases the property it will be used as a carriage depository and sales room for fine carriages, which they manufacture exclusively.

Clarence Lowell, carriage builder, has filed a petition in bankruptcy. He has liabilities of $27,963.50. Of this amount $18,598.45 is secured to the New Bedford Five Cents Savings Bank and the estate of Hiram Lowell by mortgages or real estate. He has nominal assets of $25,500, represented by real estate.

WEST MEDWAY—G. W. Southwick has been granted a patent on a vehicle tire. It is understood to embody some very valuable principles not heretofore adopted, and if the invention once gets on the market it is assured a ready sale.

SOMERVILLE—Mr. and Mrs. Hayden Sargent, of 67 Myrtle street, recently observed their fiftieth wedding anniversary. They celebrated the day by paying a visit, with their family, to Hampton Beach, N. H., the scene of their honeymoon half a century ago. Mr. Sargent is the senior member of the Sargent & Ham Carriage Company, of 26 Bowker street, Boston. Haydn Sargent was born in Merrimac, December 19, 1826, and his wife, who was Emily A. Merrill, was born at South Hampton, N. H., in 1829. They were married at South Hampton, and in the following year came to Boston. Mr. Sargent was a carriage builder, having learned the business in Haverhill before coming to Boston. In 1853 he bought out the business of Enoch Bailey, a Sudbury street carriage manufacturer, and the same year formed a partnership with A. P. Ham. C. W. Brewster was admitted to the firm in 1867, and the name was changed to Sargent, Brewster & Ham for one year. When Mr. Brewster withdrew, the old name of Sargent & Ham was resumed, and continued in use until 1891, when the business was incorporated. Mr. and Mrs. Sargent have had five children, three of whom are living.

MICHIGAN.

CARO—A new company, to be known as the Caro Buggy Co., has been organized in this city, and has already commenced business. Messrs. York and Doying are the proprietors, and both gentlemen bring into the business such experience in dealing in this class of goods as will enable them to equip and manage the new venture in a way to insure success. Arrangements are complete for the manufacture of a fine line of high class buggies. It is the purpose of the gentlemen interested to purchase the best gears, wheels and bodies that can be had in the market, and put them up according to honor.

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FLINT—On account of its immense business the Flint Wagon Company has undertaken the erection of a new engine room to prepare for the installing of a new 750 horse-power engine. A large storage building, 200 x 100, will also be erected for the coming season's shipments. This has been one of the most prosperous seasons in the company's history.

JACKSON—The Granger-Hayden Carriage Company has purchased of Dwight Merriman the old Michigan Carriage Company property, between Washington and Wesley streets, east of Francis street, and will build extensive additions to its building. At the present time the company employs about 60 hands, but when the additions are completed there will be work for from 110 to 125 hands, and they will be able to turn out about 6,000 completed jobs during the year.

OVID—A committee of Durand business men are making an effort to induce stockholders in the Ovid buggy works to locate the plant in that village. It is understood that the concern will be removed from Ovid, and many towns are making efforts to secure the prize.

MICHIGAN.

OWOSSO—Sidney B. Pratt, former manager of the Owosso Carriage works, has been appointed manager of the Wolverine Carriage Works, at Pontiac.

The Owosso Carriage Company, of Owosso, Mich. has been organized with George M. Whaley of Kalamazoo as secretary and manager. The Owosso Carriage Company is a well-established concern, capitalized at $100,000, all paid in, of which Mr. Whaley holds one-fifth. The stock was formerly largely in the hands of the Messrs. Stewart, proprietors of a private bank at Owosso, but under the reorganization it is divided into five equal parts which are held by four Owosso gentlemen—A. M. Bentley, president; C. D. Stewart, vice-president; J. C. Shattuck, second vice-president, and J. H. Robbins, treasurer, with Mr. Whaley, secretary and manager. Mr. Whaley was formerly from South Bend, where he was with the Studebaker Bros.' Manufacturing Company for two years, and before that time was with the Collins Manufacturing Company, a buggy concern of Jackson, and more recently from Kalamazoo.

PONTIAC—Pontiac Spring Wagon Works, Pontiac, increased capital stock from $50.000 to $100,000. The company is drawing plans for a new building nearly as large as the present plant, and when the proposed structure is completed the output of the factory will be increased at least one-half.

The Dunlap Vehicle Company is figuring on doubling its present capacity, and will erect a building early this fall.

MISSOURI.

KANSAS CITY—The plant of the Kansas City Buggy Company was destroyed by fire on July 27; loss about $80.000; covered by insurance.

ST. LOUIS—The Hubbell & Waterhouse Company have just recently closed a lease on the old Simmons building at Main street and Washington avenue, and are preparing to enter the market as builders of high grade buggies on a much larger scale than heretofore. The building is four stories in height with basement and 16 foot ceilings and covers almost half a block. The numbers of their building on Washington avenue will make quite an imposing array, numbering as they do from 101 to 111 Washington avenue, and from 601 to 603 North Main street.

The new factory of the Moon Bros.' Carriage Co. will be erected at 4900 to 4930 McKissock avenue in the near future, a building permit having been issued to the proprietors. The permit, however, provides for a structure to cost $83,000.

NEW HAMPSHIRE.

PEPPERELL—William McVitie has closed out his business and moved to Nashua.

NASHUA—The entire south wall of the building occupied by the City Carriage Co. fell out this morning and slid with a large quantity of earth into the cellar which is being excavated for the Greeley building. With the fall of the wall the roof caved in. At the time the accident occurred there were four men working in the building. Fortunately no one was injured. The men at work in the place were Benjamin Ledoux, William Strout, Edward Garvin and J. E. Douglass. In excavating for the new building the men who were digging the cellar worked too close to the other building and this caused the accident. The loss will be several hundred dollars.

NEW YORK.

BATAVIA—The Batavia Carriage Wheel Co. passed into possession of the Standard Anti-Friction Equipment Co., of New York, on August 1. There were no ceremonies incident to the important event. In fact the New York company sent no one to take formal possession in its name. The men who were officers of the company before it was sold were given to understand that their services would be needed in the future before the transfer was made, and they have since heard nothing to the contrary. Meanwhile business goes on at the factory as heretofore.

BROOKLYN—A petition has been filed in the United States District Court asking that John Weismantle and George Cooper, doing business under the firm name of the Greater New York Carriage Co., at 174 Jewett street, be adjudged a bankrupt. The petitioners and their claims are as follows: A. Schmitt & Son, $126.60; George F. Lewis & Co., of Manhattan, $196.53; Warner Manufacturing Co., of Massachusetts, $129.50; H. N. Thayer & Co., of Erie, Pa., $95.95; J. B. Ryer, Son & Co., of Manhattan, $52.96. The petitioners allege that Weismantle and Cooper, on May 28 last, and while insolvent, allowed Adam Mann, and other creditors, to obtain preferment, by securing judgment against them, upon which a levy was made, and the goods levied were advertised to be sold. Robert H. Roy was appointed temporary receiver.

Morris Kraus and Benjamin Kraus, composing the firm of Kraus Bros., engaged in the horse and carriage business, at 97 to 105 Union street, Brooklyn, and 340 East Fifty-ninth street, Manhattan, yesterday filed their petitions as voluntary bankrupts. They scheduled firm debts to 108 unsecured creditors amounting to $62,597, with a number of other creditors whose claims are unknown, and no assets. Morris Kraus gives personal debts in $814, with assets valued at $100, and Benjamin Kraus $294 personal debts and $75 in assets.

BUFFALO—J. Duchman's Sons, carriage builders, have made a large addition to their factory on Seneca street and put in up to date machinery.

COHOES—The Paul Mill and Pole Co., of Cohoes has been incorporated with a capital of $1,000 to manufacture carriage and wagon supplies. The directors are: Archibald Paul, William W. Snyder, Frederick W. Kavanough and Jacob D. Leversee, of Cohoes.

DELHI—C. L. Huber is making an addition to his carriage shop, 12 x 28, for an office, and will also put in an elevator for raising carriages to the upper floors.

GROTON—The plant of the Groton Carriage Co. has been sold at auction. The price paid was $97,100, and the purchasers were Frank and Benjamin Conger. There had been some dissension among the stockholders who refused to make further advances for the purpose of refitting the plant. The new company will be recapitalized and placed on a sound financial basis. Automobiles as well as carriages will be manufactured.

PENN YAN—E. A. Price & Co.'s spoke factory is nearing completion, and the firm will shortly be ready to fill orders.

SYRACUSE—Jorah D. Whitney, the former carriage manufacturer, has filed a petition in bankruptcy. His assets are nothing and his liabilities are $2,200. The entire amount is due on a note which he endorsed.

TRUXTON—W. S. Stone has bought out Frank Steele's wagon business.

CINCINNATI—The assignment of the Emerson & Fisher Carriage Company, dating back four years, has been formally lifted through Attorneys Marsh and Ritchie. The claims against the company at that time amounted to about $400,000. The firm will continue in business under favorable terms by the creditors.

An assignment has been made by the Southern Buggy Company, doing business as a manufacturer of buggies on Richmond street, near McLean avenue. The cause was dull trade, pressure of creditors and suits in attachment. The concern was small. M. J. Crotty was the proprietor. He has been running behind for some time, getting into debt deeper and deeper. Clarence Von Phul is the assignee. The assets are $1,000 and the liabilities $2,500. The attorneys are Marsh & Ritchie.

CLEVELAND—The Cleveland Buggy and Wagon Company, incorporated, capital stock $2,500; C. A. Corbin, M. F. Goodman, A. J. Thompson, A. E. Green, E. G. Harte.

A large part of the stock of the Squires Carriage Company, on Huron street, near the junction of that thoroughfare and Euclid avenue, was damaged by fire on July 26. Prompt work by the fire department prevented the blaze from spreading from the rear of the building to the front and destroying the structure and its contents, and from spreading at the rear to a number of dwellings and other buildings on Prospect street. Only ten feet from the rear of the burning building were seventy-five gallons of gasoline in the plant of the Toilet Supply Company. As near as could be learned the fire started in the basement among a lot of varnishes and oils. From there the flames reached up an elevator shaft to the second and third floors, where considerable damage was caused. Spontaneous combustion or a live electric wire are the only theories advanced as to the origin of the fire. Many carriages were damaged, and a number were partly consumed by the flames. A number of automobiles were also in the fire. The total loss will not exceed $10,000. Of this sum over $9,000 was on the contents, the damage done to the building being slight. H. D. Squires, the manager, said last night that his stock was valued at about $35,000, and was covered by insurance.

PENNSYLVANIA.

PHILADELPHIA—John W. Lineaweaver has rented the Zeiger coach works, and will engage in the business of coachmaking.

Plans for a carriage factory for Samuel G. Stokes, of this city, are about completed. Mr. Stokes says that it will be one of the largest carriage plants in Philadelphia.

CONNELLSVILLE—S. Crossland & Sons' addition to their wagon shops in New Haven is about completed. Part of the new addition is brick, to make the fire walls for the blacksmith shop. The remainder is frame. When completed the plant will have an increased capacity.

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TEXAS.

HOUSTON—Mr. L. H. Burks, of Fairburg, Nebraska, is in the city perfecting arrangements for opening a vehicle and harness establishment in Houston next month. The firm will be L. H. Burks & Sons, and will be located in the Rice Hotel Annex on Travis street.

VERMONT.

BRATTLEBORO—J. T. Hildrith's carriage and box shop was destroyed by fire July 26; loss about $4,000. The fire is believed to have been caused by spontaneous combustion.

WISCONSIN.

FOX LAKE—J. A. North & Sons, carriage and implement dealers, Wis., have filed a petition of voluntary bankruptcy, scheduling liabilities at $12,617 and assets at $487.

RACINE—On August 1st the two-story frame building used as a storehouse by the Fish Brothers' Wagon Company was burned. The loss will not exceed $35,000; covered by insurance.

MILWAUKEE—The bankrupt Cribb Carriage Company filed an inventory of its liabilities and assets. The assets are scheduled at $73,113.65 in face value, but are estimated to be worth only between $5,000 and $18,000. The debts of the company are $10,487.04.

STEVENS POINT—M. Neseman contemplates the erection of a large building, which will be utilized for blacksmith and wagon shops. He will personally attend to the horseshoeing department and will engage competent men to run the ordinary blacksmithing, woodworking and painting departments.

WITH HAWLEY, KING & CO.

WILL. EGETHOFF, for many years associated in the management of the Studebaker Bros. Manufacturing Co., Los Angeles, Cal., has resigned his position to accept the management of Hawley, King & Co.'s repository, in that city.

EXPIRED PATENTS.

THE following list of patents, trade-marks and designs of interest to our patrons are furnished by Davis & Davis, solicitors of American and foreign patents, Washington, D. C., and St. Paul Building, New York City. A copy of any of these may be had for 10 cents by sending to the above firm.

PATENTS EXPIRED JUNE 3, 1901.

299,518—Wagon-Bolster Spring—J. R. Calhoun, St. Louis, Mo.

299,556—Thill-Coupling—S. D. Lecompte, Leavenworth, Kan.

299,575—Vehicle-Spring—Jas. Percy, Chicago, Ill.

299,696—Thill-Coupling—Charles E. Struck, Newark, N. J.

PATENTS EXPIRED JUNE 3, 1901.

300,020—Vehicle-Spring—Henry J. Schild, Stanton, Mich.

300,051—Two-Wheeled Vehicle—Albert Davis, Mason, Mich., assignor to the Mason Road Cart Co., same place.

300,089—Vehicle-Top—Frank A. Korizek—Milwaukee, Wis.

300,231—Road-Cart—Isaac Dolsen, Beemerville, N. J.

PATENTS EXPIRED JUNE 17, 1901.

300,377—Two-Wheeled Vehicle—J. D. Libey, Lima, Ind.

300,390—Wagon-Dasher—Elijah Myrick, Harvard, Mass.

300,392—Hub—John F. Packer, Chicago, Ill.

300,660—Spring-Coupling for Vehicles—G. F. Thompson, Oshkosh, Wis., assignor to himself and A. Wilson, same place.

PATENTS EXPIRED JUNE 24, 1901.

300,847—Jump Seat, and 300,848—Shifting Pole for Vehicles—J. T. Clarkson, Amesbury, assignor of one-half to Frank A. Babcock, Salisbury, Mass.

300,914—Wagon Running Gear—John Ball Spry and Thomas Barry, Valparaiso, Ind.

PATENTS EXPIRED JULY 1, 1901.

301,103—Vehicle Hub Cap—John G. Eberhard, Akron, Ohio.

301,144—Wheel for Heavy Wagons—W. D. Orcutt, Boston, Mass.

PATENTS EXPIRED JULY 8, 1901.

301,478—Wheel and Axle Coupling—A. B. Carter, Great Falls, assignor of one-half to S. H. Atkins, Milton Mills and C. W. Prescott, Raymond, N. H.

301,480—Vehicle Spring—W. R. Corlett, Cleveland, Ohio.

301,516—Two-Wheeled Vehicle—F. L. Perry, Bridgeport, Conn.

301,546—Wagon Running Gear—H. W. Whitney, Monroe, Wis.

PATENTS EXPIRED JULY 15, 1901.

301,857—Road Cart—A. E. Carter, Hudson, Mich.

301,886—Manufacture of Carriage Tops—T. Hawley, Fairfield, Conn., assignor of one-half to E. W. Harrall, same place.

301,926—Vehicle Top Prop—F. Schreidt, Mansfield, Ohio, assignor to Schreidt & Miller Co., same place.

PATENTS EXPIRED JULY 22, 1901.

302,252—Vehicle Spring—John W. Henney, Freeport, Ill.

302,274—Hub—S. Mitchell, Lima, N. Y.

302,406—Running Gear for Vehicles—J. B. Howell, Allentown, N. J.

PATENTS EXPIRED JULY 29, 1901.

302,522—Corner Iron for Vehicle Bodies—D. P. Ferguson, Atlanta, Ga.

302,613—Side-Bar Vehicle—G. A. Weyland and L. Roeder, Boonville, Mo.

302,618—Carriage Spring—Samuel Atkinson, Hulton, Pa.

Wants.

Help and situation wanted advertisements, one cent a word; all other advertisements in this department, 5 cents a word. Initials and figures count as words. Minimum price, 30 cents for each advertisement.

SITUATIONS WANTED.

Position as bookkeeper by young man, with eight years' experience in carriage manufacturing business. Can furnish bond and references. Address "W. F. H.," Box A75, care THE HUB.

HELP WANTED.

Wanted—Painter foreman to correspond with a view to contracting. Good man to take charge of paint department in factory with output of 8,000 to 12,000 jobs per annum. First class position, good salary. Best of references required. Address F. A. AMES & CO., Ownesboro, Ky.

Wanted—Two first-class stripers on cutter and buggy bodies and gears. Steady, permanent situations, highest wages. THE McLAUGHLIN CARRIAGE CO., Oshawa, Ont., Canada.

Wanted—A salesman to sell carriage hardware to Western trade; one acquainted with buyers for wholesale builders and dealers in carriage material. One who has sold a full line of carriage material preferred. Address in confidence, stating age, experience and salary expected, "EASTERN MANUFACTURER," care THE HUB.

Wanted—First class carriage salesman for New England. Address "WAYNE," Box A76, care THE HUB.

Wanted—A good blacksmith on light and medium custom work by an old established concern in one of the best cities in Eastern Pennsylvania. Must be competent, industrious and sober. Steady work and good wages. References required. Address "BLACKSMITH," Box A73, care THE HUB.

Wanted—Superintendent for a modern and well equipped factory producing 8,000 wheeled vehicles and sleighs. Good grade work. Required a steady, capable, married man, thoroughly up to date in all departments, and whose heart is in the business. Satisfactory contract to right man. All correspondence confidential, if requested. Address, giving age and record, salary required, etc., "BOX A74," care THE HUB.

Wanted—One or two good body makers to build depot wagons by the day or contract. Address with references, "P. G.," Box 71, care THE HUB.

Wanted—Hustlers to secure new subscribers for THE HUB. A good chance to make money easily. Subscription price, $2.00 a year. Liberal commission paid. Address Subscription Department, THE HUB, 24-26 Murray street, New York.

PATENTS.

PATENTS.—H. W. T. Jenner, patent attorney and mechanical expert, 607 F street, Washington, D. C. Established 1883. I make an examination free of charge, and report if a patent can be had and exactly how much it will cost. Send for circular.

BUSINESS OPPORTUNITIES.

Wanted—A gentleman to invest $10,000 in a corporation and to take an active part in carriage business established over 75 years, within seven miles of Boston, Mass. Now doing a large repair business and wishing to broaden by manufacturing new wagons, for which with our good reputation there is a great demand. Owning real estate valued at $50,000, with an income derived from tenants annually to the amount of $4,000; also a new factory fully equipped with steam power and machinery. Address "F. W.," care THE HUB.

FOR SALE.

Solid rubber tire patent. Entirely new principle. Cannot get off the rim. Economical. Experienced tire men say it is the best they have ever seen. For particulars address "RUBBER TIRE," care of THE HUB.

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COLOR SECRETS.

No. 44.—Contingencies.

It is said of Napoleon that, before a battle, he thought very little of what he would do, in case of victory—victory would take care of itself—but that he made exhaustive plans for his course of action, in case of defeat. A billiardist, who knows about the game, never plays merely for the count in hand; but with special purpose to locate the balls for another shot. It is quite as necessary in business, as in war or in sport, to prepare for contingencies and calculate on future needs. This principle applies with peculiar force to the use of Colors. You may, sometimes, get a reasonably good color, for the present job, without difficulty: and if you never wanted any more color, of that sort, you need not give the matter another moment's time. If this is your last shot, your only battle, of course there will be no contingencies.

But you are not going out of business just yet. If the present job is pleasing, many customers will want it duplicated. How about the color? Can you duplicate that exact shade? Not unless you got it of a reliable firm—not unless a perfect modern equipment has been put into the making of it. To give you exactly the same shade means the appliances and the skill and the care which you seldom find. Suppose, by some accident, you run short of your special color at the latter end of a job—unless you can get a precise duplicate your work is ruined. We can precisely duplicate every color we put on the market. That is a very special part of our business. Give us a test.

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By Gardner D. Hiscox, M. E. This work is written on a broad basis, and comprises in its scope a full illustrated description with details of the progress and manufacturing advance of the automobile. The make-up and management of automobiles of all kinds is liberally treated, and in a way that will be appreciated by those who are reaching out for a better knowledge of the subject. The book is up-to-date and very fully illustrated with various types of automobiles and motor cycles, with details of the same.

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How to Space Letters.
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A work of nearly 200 pages and 200 illustrations. Detailed directions given for painting carriages, wagons and sleighs, besides full instructions in all the various branches, including lettering, scrolling, ornamenting, striping, varnishing and coloring, with numerous receipts for mixing color. It contains information of value to the most expert painter, and is indispensable to those whose opportunities for learning the business have been limited. This book will be found valuable to all, and treats, among other things, of wagon striping, with descriptions of tools employed; wagon lettering, with illustrations of a great variety of letters, and directions how to make and shade them. Wagon scrolling is fully described and illustrated, and also stenciling.

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This book contains original colored designs in modern sign lay-outs, with beautiful rococo scroll work and all the latest modern alphabets, together with all standard and legitimate styles. It stands absolutely alone. Nothing like it has ever been published. No expense has been spared in compiling this work. Up to date ideas—up to date suggestions. 45 pages of illustrations. Size, 8½x12 inches, bound in maroon flexible cover.

Practical Carriage and Wagon Painting; price, $1.00.

A very complete work on the subject of carriage and wagon painting. It covers all topics pertaining to this branch of the trade, including every feature of the work from priming to finish, with a discussion of tools, materials and paint shop appliances, giving many practical methods and formulas and devoting one chapter to the painting of cutters and sleighs. The name of the author, M. C. Hillick, is sufficient guarantee of the high standard of the work. He has succeeded in making it plain and practical enough for all. Bound in cloth, well illustrated and containing upward of 160 pages.

Painters' Encyclopedia; price, $1.50.

By Franklin B. Gardner. 158 illustrations, 427 pages. Containing definitions of all important words in the art of plain and artistic painting, with details of practice in coach, carriage, railway car, house, sign and ornamental painting, including graining, marbling, staining, varnishing, polishing, lettering, stenciling, gilding and bronzing.

American Carriage Directory; price, $5.00.

This work contains a complete directory of the United States of the carriage and automobile builders and dealers, accessory manufacturers, etc. It contains over 36,000 carriage and wagon makers, 22,000 carriage and wagon dealers, 3,000 material manufacturers and dealers, 7,000 sleigh manufacturers and dealers. Since the previous issue many changes have been made in location, new names, names crossed out and changes in firm names.

Practical Carriage Building, 2 vols.; price, $1.00 each.

A compilation of practical articles showing timber plans for a carriage shop. Vol. 1 considers tools, floor and bench and woodworking appliances; the making of wheels, and practical hints on repairing; descriptions of mortises and laps for carriage-parts, and practical hints on the gather of wheels, plumb spoke, etc. A book of 224 pages, profusely illustrated, finely printed and bound in cloth.

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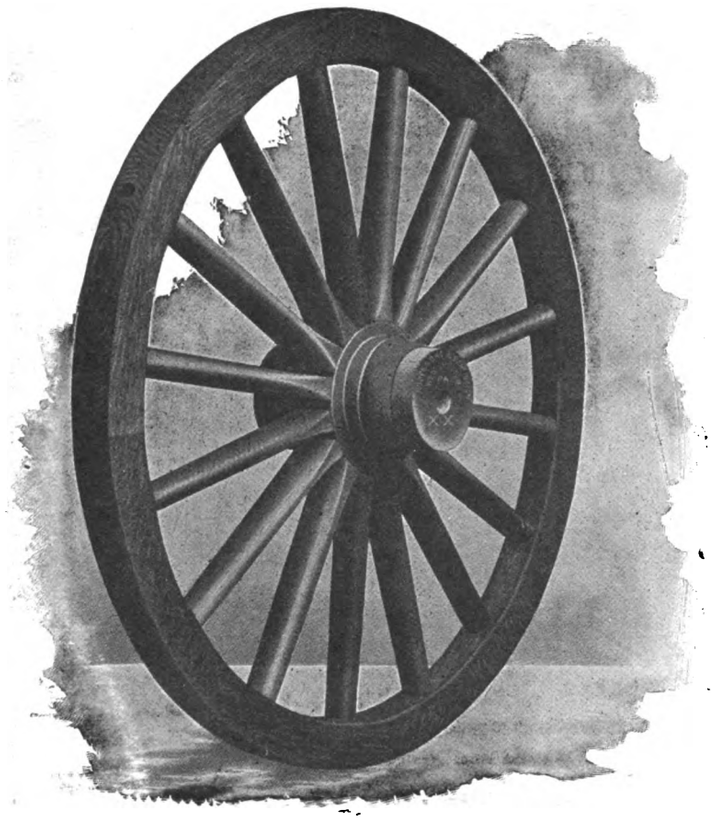
Volume 3 treats of blacksmiths' tools, bench tools, tools for farm work, etc.; wrenches, welding, brazing, soldering, tempering, hardening, testing, hand forgings; making of chain swivels and plow work.

Volume 4 covers miscellaneous carriage iron, tire handling, setting axles, springs, bob sleds, tempering tools, proportion of bolts and nuts, welding and hardening steel, and finally iron and steel tables of use to carriage, wagon and sleigh makers.

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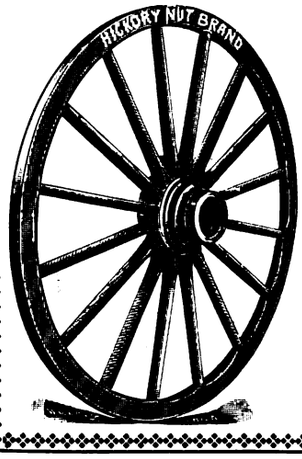
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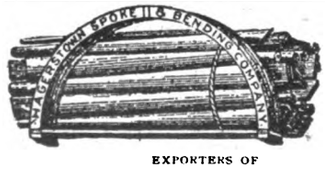
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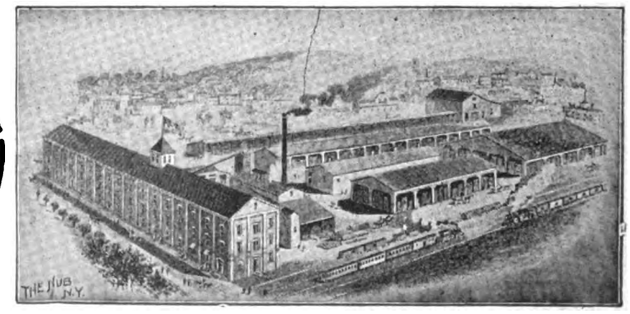


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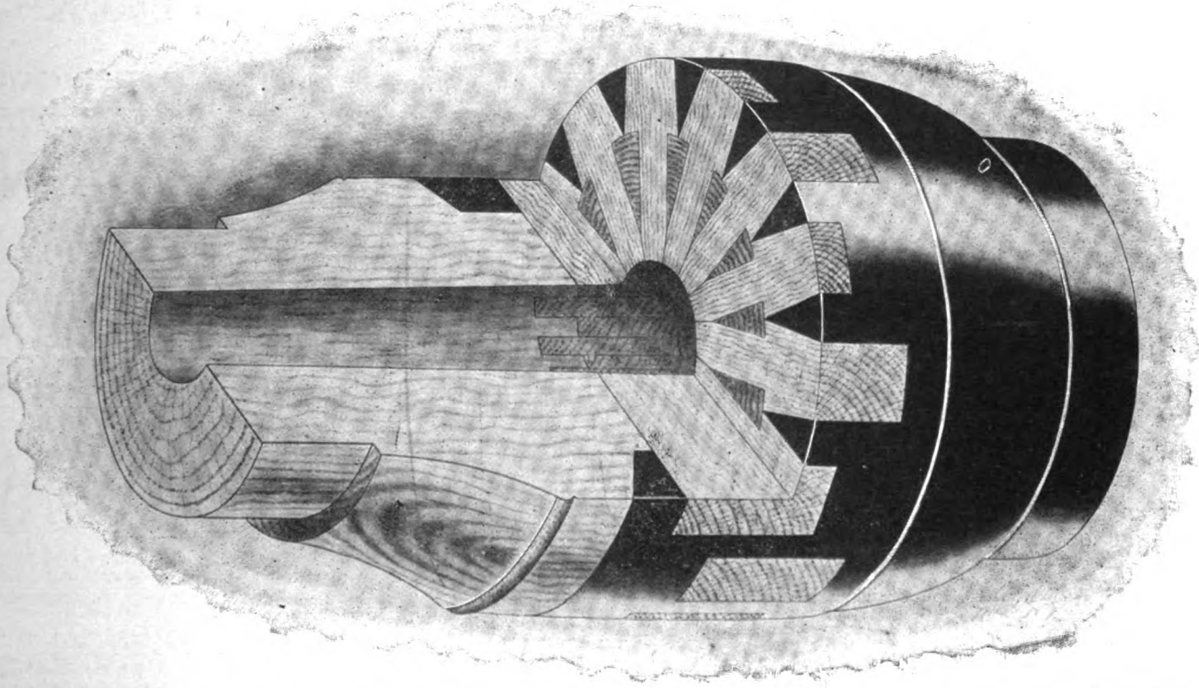
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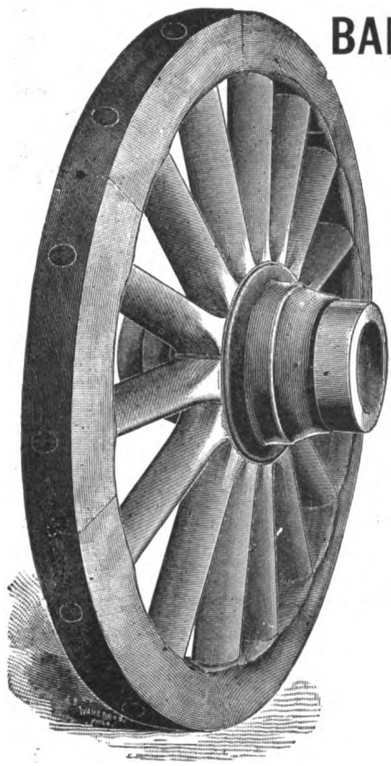
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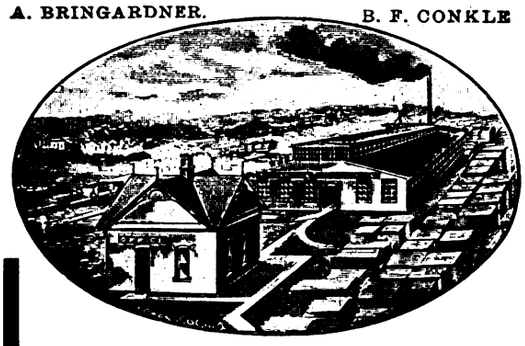
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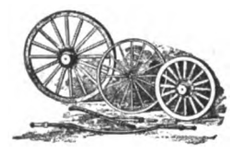
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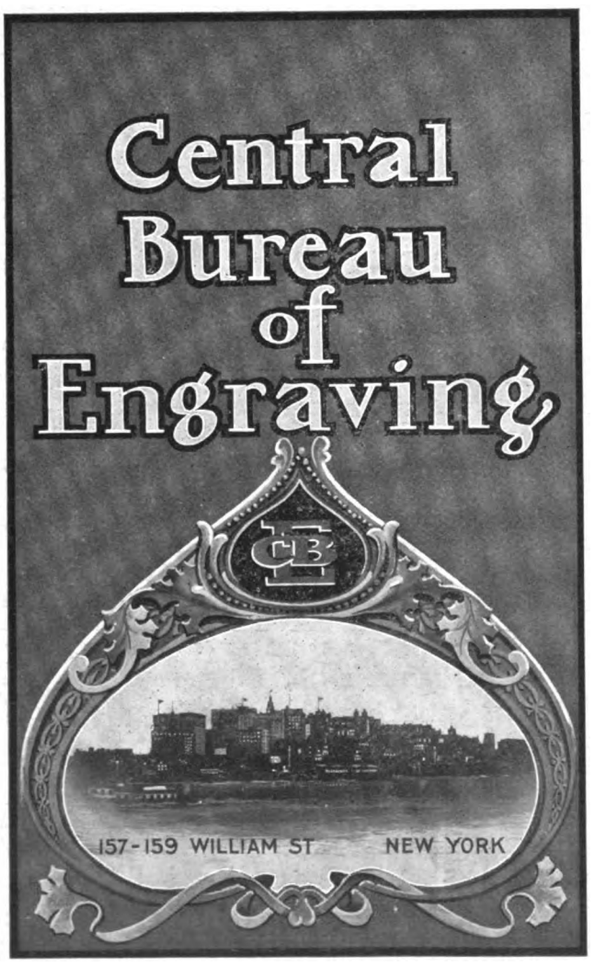
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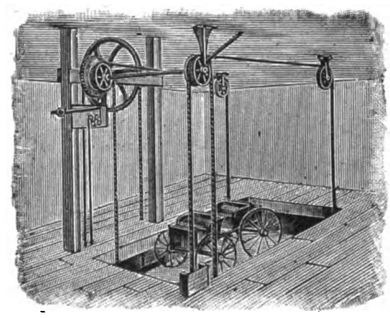
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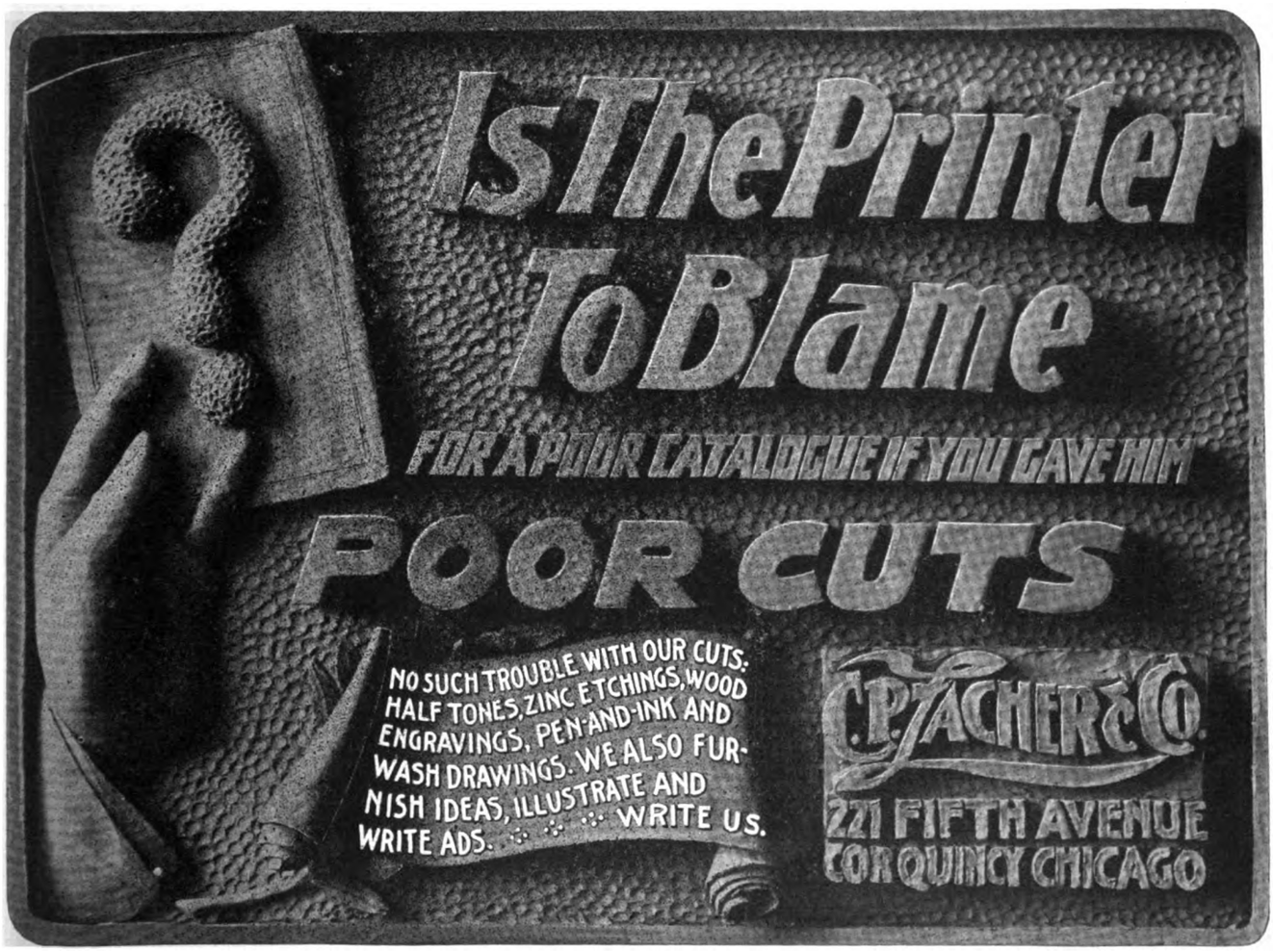
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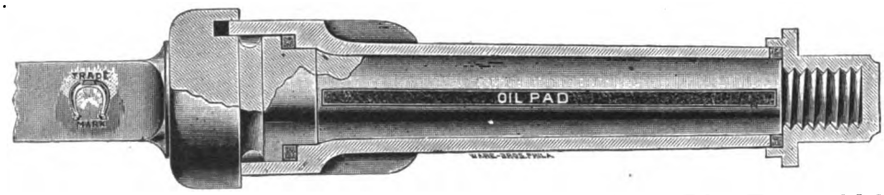
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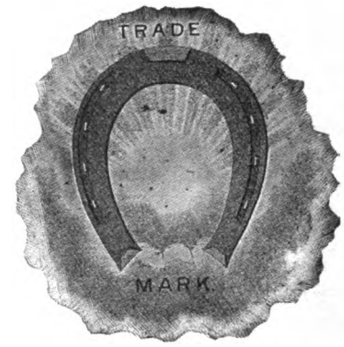


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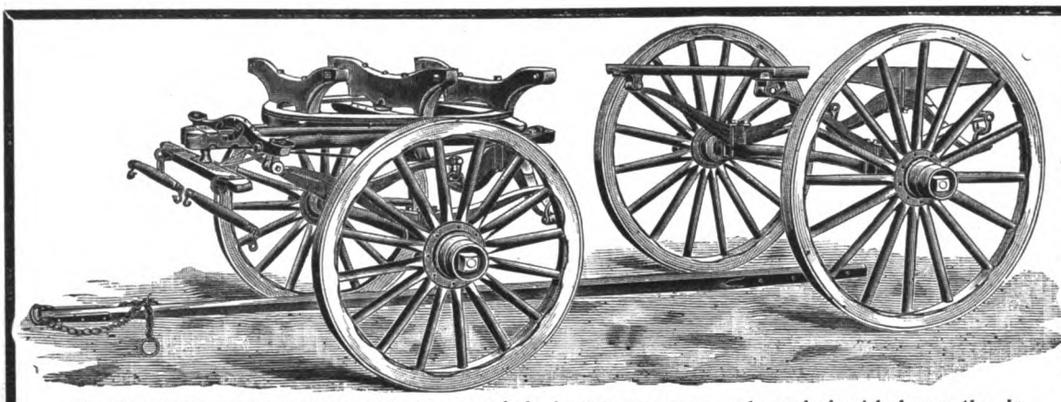
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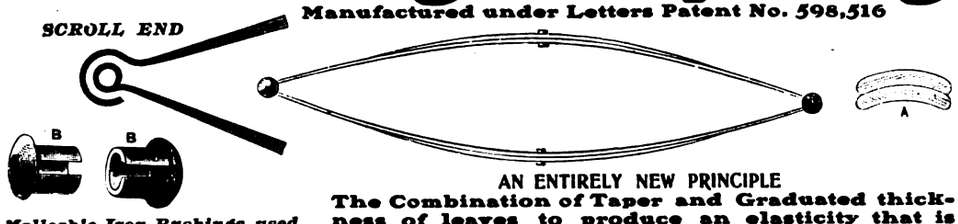
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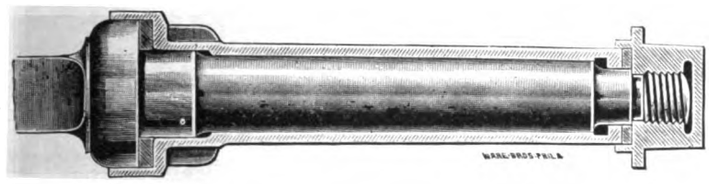
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This is the finest Axle on the market for light and medium weight Carriages.



In it there is more value for the money than in any other at any price. Full particulars sent on application.

To it, when desired, we can at a small extra cost apply the Brewer Longitudinal Axle Lubricator, which is the simplest device known for continual lubrication, and has the added merit of not weakening either arm or box by the removal of metal at vital points and does not allow oil to leak out.

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MANUFACTURED BY

THE TUTHILL SPRING CO.,

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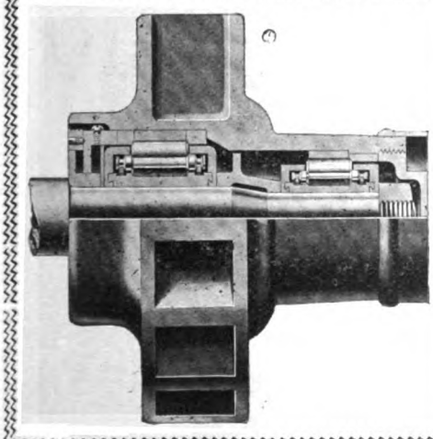
is superior to any other triple elliptic Spring yet produced.

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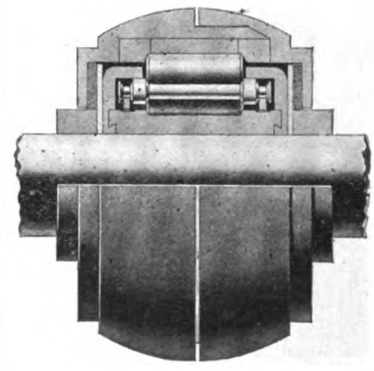
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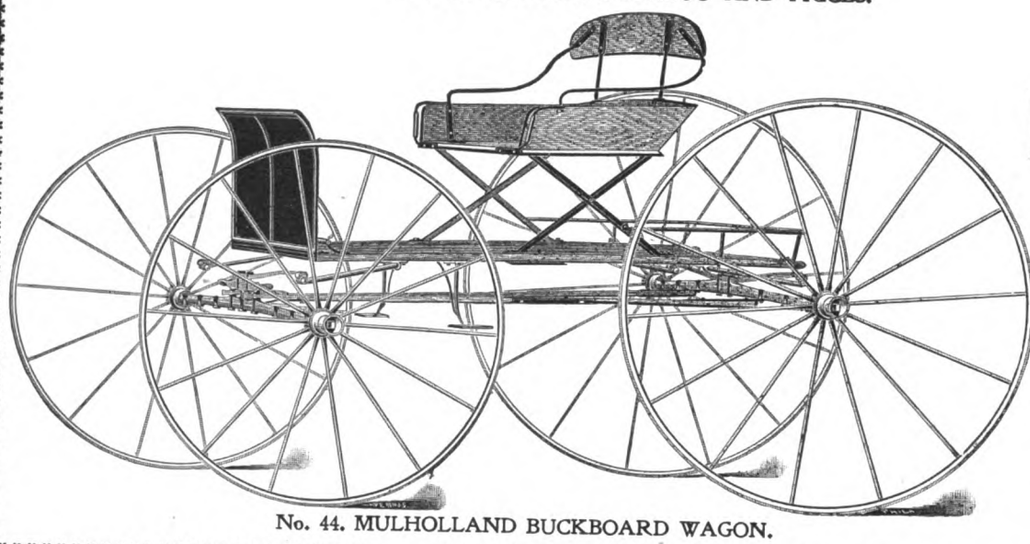
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Is made by using THE MULHOLLAND SPRINGS.
The Popular Vehicle from Maine to California.

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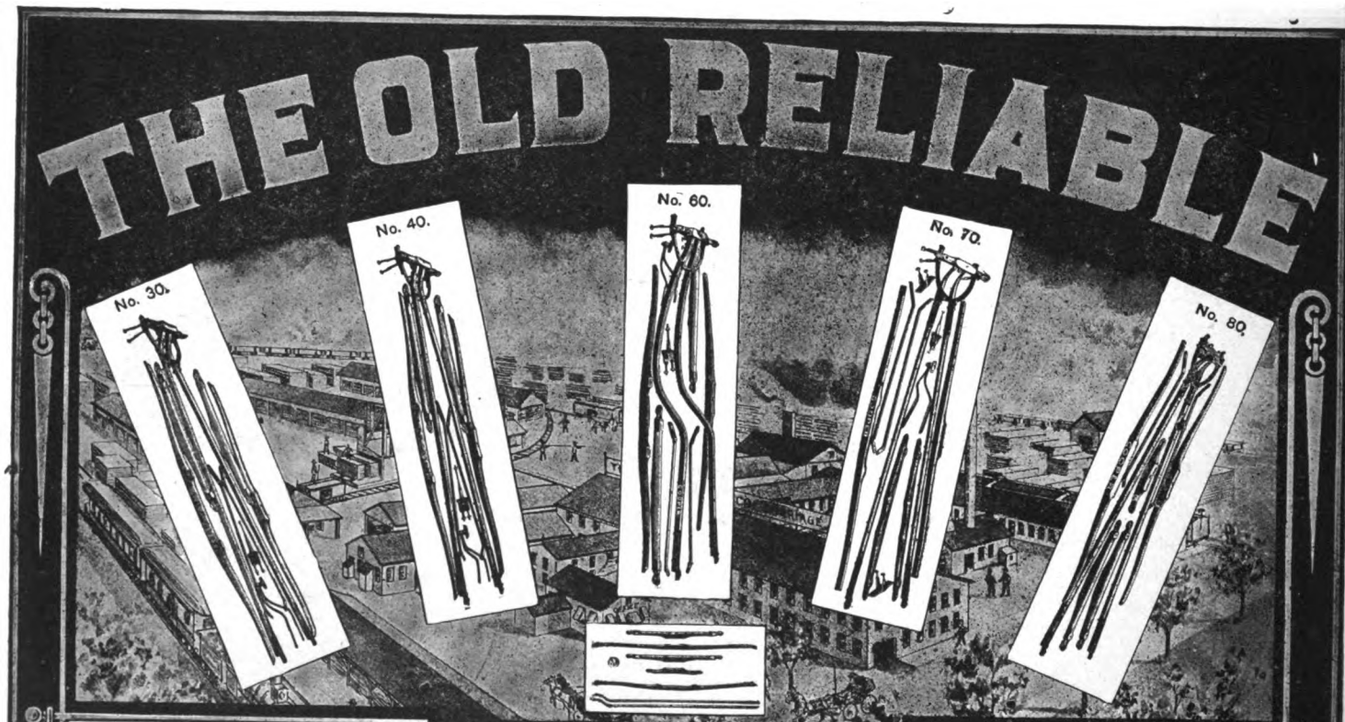


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RECOGNIZED LEADERS and the only PRACTICAL CARRIAGE MAKERS in the GEAR WOOD TRADE.

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ARE POINTS WE ARE PROUD OF IN THE

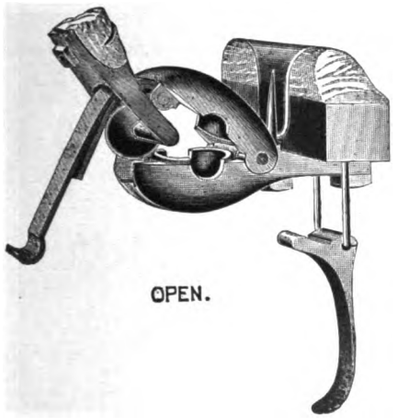
MULHOLLAND SHAFT COUPLER.

CONSTRUCTION.

THE Mulholland Coupler is Quick Shifting, Ball-Bearing, Leather Bushed. The Bushings are cemented into jaws and lined with Graphite. It has a non-breakable spring of uniform width and thickness, and a dirt proof flange and interlocking device. It takes up its own wear.

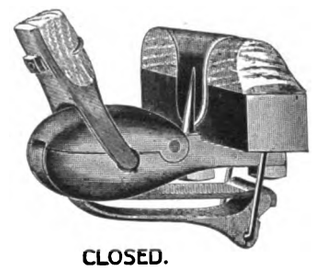
MATERIAL USED—ALL STEEL.

THE Shaft and Pole Ends are forged from Bar Steel. The Springs are of Crucible Steel, while the Jaws, Levers, etc., are of Bicycle Steel. The STRONGEST, and it may be well to state the most EXPENSIVE materials used in Shaft Coupler construction.



OPEN.

THIS IS WHAT MAKES THE MULHOLLAND the Most Perfect Shaft Coupler on the market. : : : : : : A sample pair will convince you of its merits. : : : : :



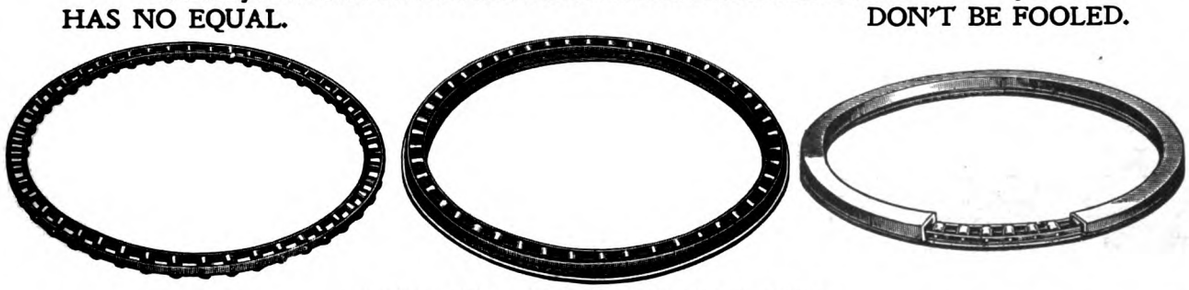
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Roller-Bearing Fifth Wheel.

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It is the product of a practical wagon builder, who has made a careful study of his trade and the necessity of developing something new in the way of a fifth wheel that would overcome the friction caused by the old circle in use on all kinds of platform vehicles. The present fifth wheel is the outcome of years of experiment, and contains all the good features lacking on other fifth wheels. The rollers, while an important part of the Nielson patent, without the other features, would be as worthless as some others that are offered as "the best."

Don't let anybody tell you that So and So's Roller Bearing Fifth Wheel is just as good as the Nielson.

Roller-bearings, like ball bearings, to prove of value must be properly housed. This is one of the greatest practical points on the Nielson, as it is constructed so that neither dust nor the elements to which fifth wheels are subject can affect the rollers.

As the rollers overcome all friction, the use of oil, grease or other lubricants is obviated, and thus when once the Nielson is attached to a vehicle, the user need give this part of the vehicle no further thought, as it will outlast any vehicle. It always works easy, and never gets out of order. No worry about broken shafts or poles, as the Nielson turns easily under the heaviest load. It is a godsend to dray horses, as well as to the users of vehicles for mercantile purposes, as the Nielson not only saves the horses, but prolongs the life of the vehicle.

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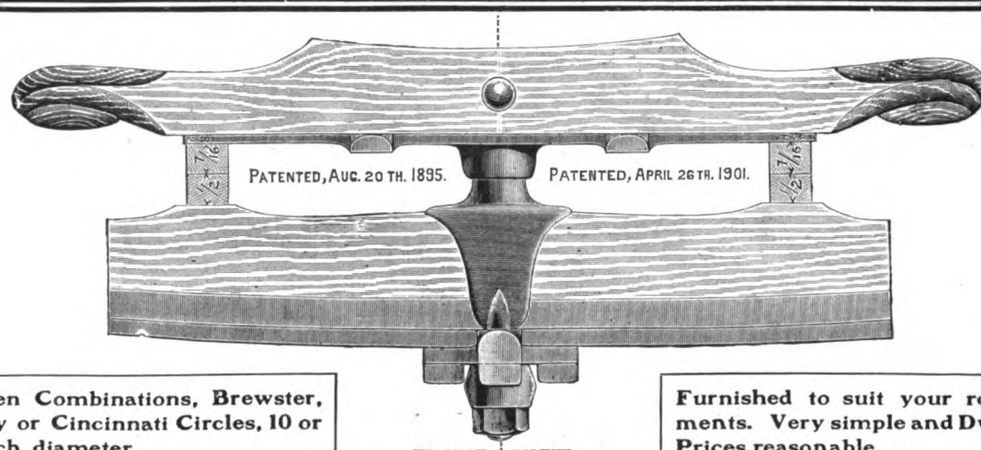
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REAR CLIP KING BOLT GEAR SETS



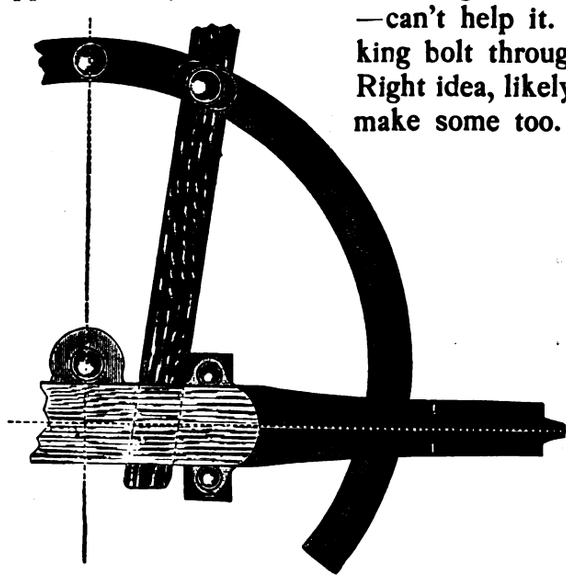
Sixteen Combinations, Brewster, Derby or Cincinnati Circles, 10 or 12-inch diameter.

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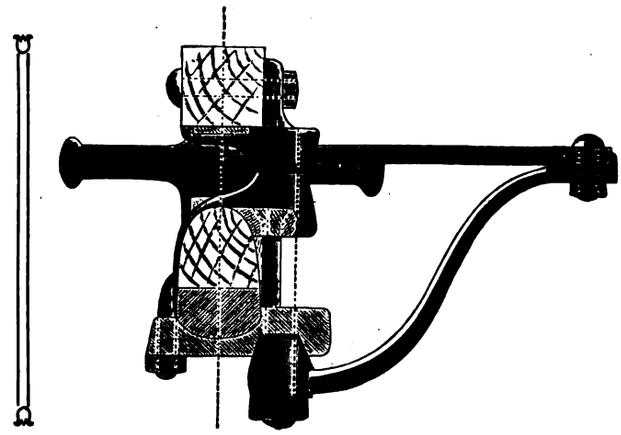
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TOP VIEW



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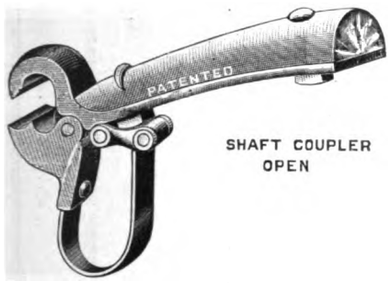
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The STANDARD COUPLER.

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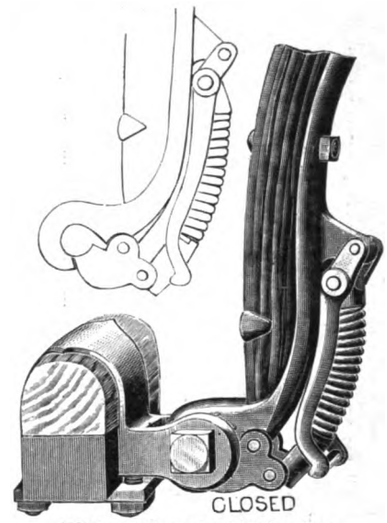


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Used with regular shaft shackle. Fits any size bolt perfectly. Cannot become detached while driving. No loose bushings. Its vise-like grasp of bolt prevents all rattle or squeak. If you try a sample pair you will never use any other.

1901 MODEL ATTACHED.

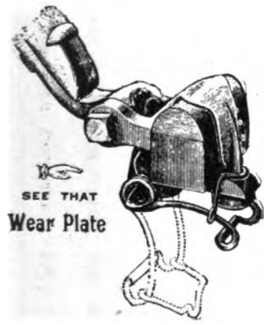


With Unbreakable Spring.

The Johnson Anti-Rattler

Best Ever Made. Applied in a Few Seconds. No Tools Required.

CHEAPEST AND MOST DURABLE.
EVERY PAIR WARRANTED.



The greatest and only positive Anti-Rattler ever invented.

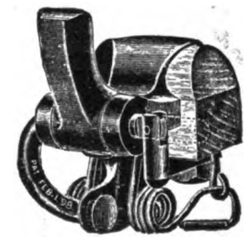
Has almost entirely superseded all other devices.

Over three million pair sold.

Made of the best oil-tempered crucible steel wire with malleable wear plate.

The JOHNSON QUICK SHIFTER

REMOVED IN A FEW SECONDS.
NO TOOLS REQUIRED.
USED WITH REGULAR SHAFT SHACKLE.
SAFEST AND CHEAPEST.



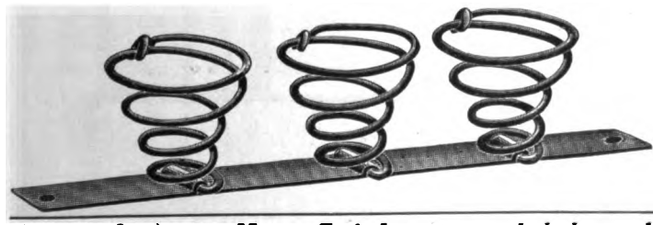
It consists of the famous ***Johnson Anti-Rattler*** (of which there are millions in use), to which is attached a curved steel bolt with ***safety drop end.***

☞Look at illustration and see the point.

Safer than old bolt and nut, which it will surely supersede. No accident can happen, as no part is liable to break or wear out.

BEWARE OF BOGUS IMITATIONS THE PRICE OF WHICH IS RELIED UPON TO SELL THEM.

OUR NEW SPRING CUSHION.



Furnished exactly as shown in illustration, all ready for attaching to wood frame.

Is cheaper and applied with less labor than any similar device. TRY THEM.

Write for our New Catalogue containing above and 400 other devices we manufacture for the Carriage and Wagon Trade.

Please mention "The Hub" when you write.

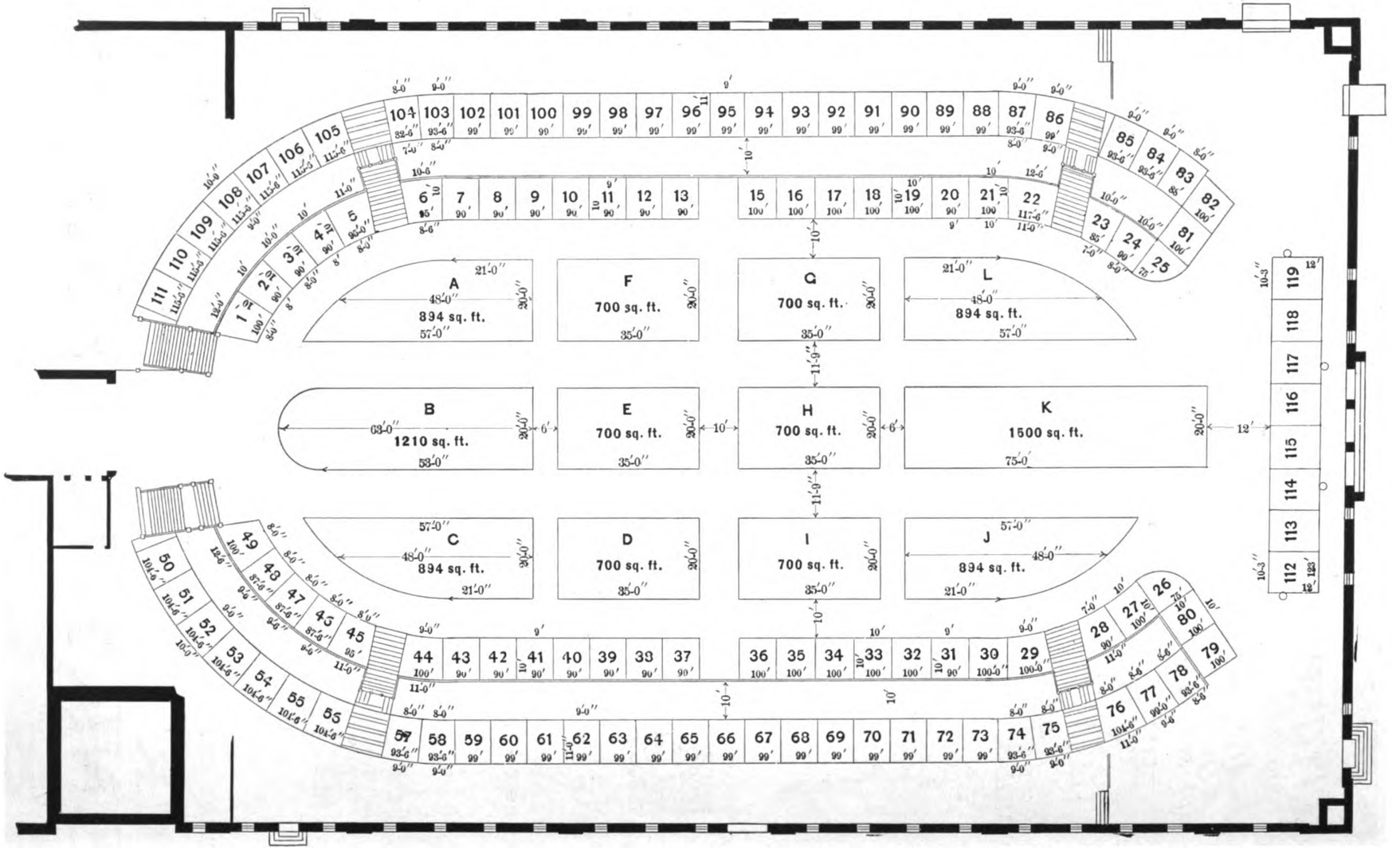
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SECOND ANNUAL AUTOMOBILE SHOW

AT THE

MADISON SQUARE GARDEN, NEW YORK CITY.

November 2d to 9th, 1901. **FRANK W. SANGER, Manager.**



All lettered spaces, $1.25 per square foot. **All other spaces, $100 each.**

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DESIGNERS, Builders, Decorators of Booths for Fairs and Expositions. Interior and Exterior Decorations for Public Demonstrations, Balls and Entertainments. Scenery and Effects for Amateur Theatricals. Sketches and Estimates furnished on application. Signs of all kinds, Electric, etc. Desks, Chairs, Tables. Denim and Rugs for floor covering. Posts, Railings, etc. Work done in any part of the United States.

HENRY L. ENNIS, *Telephone, 271 Bedford.*

GATES AND NOSTRAND AVENUES,

BROOKLYN, N. Y.

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Are You Ready?

TO FIGURE ON — WIRE WHEELS

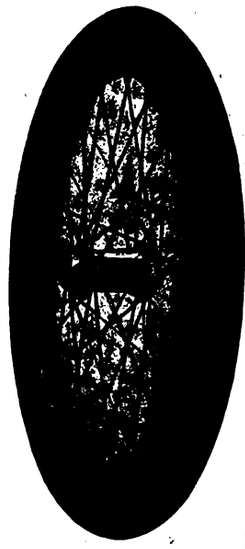


Everything from

4 lb. SULKY WHEELS

to...

20 lb. AUTOMOBILE WHEELS



Wood or Steel Rims as desired

I. A. WESTON CO.
SYRACUSE, N. Y.

UP-TO-DATE LAMPS



TAURUS.

That Will Burn.
That Will Wear.

Beautifully Designed,
Elegantly Trimmed.

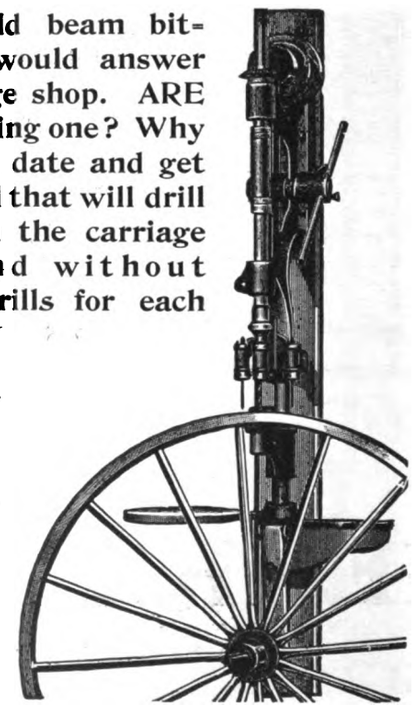
SEND FOR CATALOGUE AND PRICE LIST.

George Enders
No. 8 Fairview Ave.,
NEWARK, N. J.

REPAIRING AND REMOUNTING.

There Was a Time

when an old beam bit-stock drill would answer for a carriage shop. ARE YOU still using one? Why not be up to date and get a turret drill that will drill any hole on the carriage quickly, and without changing drills for each side hole.



Especially Adapted For Tires.

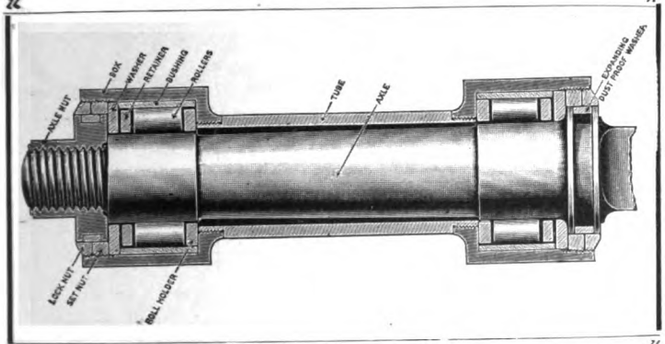
THE GEORGE BURNHAM CO.,
21 Hermon Street, WORCESTER, MASS.

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STRENGTH DURABILITY and SIMPLICITY

are distinctive features of the.....

MORSE ROLLER BEARING AXLE.



The Morse Roller Bearing Fifth Wheel will interest you, too.

Write for circulars and price list.

THE BANTAM MFG. CO.

BANTAM, CONN.

SEPTEMB'R-1901.

Sun	Mon	Tue	Wed	Thu	Fri	Sat
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For One Month Only

Free Scholarships

IN MECHANICAL ELECTRICAL STATIONARY LOCOMOTIVE MARINE **ENGINEERING,**

Heating, Ventilating and Plumbing,

Mechanical Drawing.

To secure a few representative students in all parts of the country, the Trustees of the American School of Correspondence have been offering a limited number of free scholarships. This offer will be

WITHDRAWN

September 30th, 1901. Applications from properly qualified applicants will be considered in the order received until that date.

This is the opportunity of a lifetime to get a technical education at home. The advantages offered by a school located in an educational center like Boston are evident to every intelligent man.

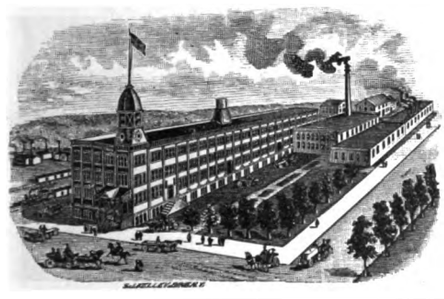
Large Handbook, describing courses, etc., free on application.

AMERICAN SCHOOL OF CORRESPONDENCE,

(Chartered by the Commonwealth of Massachusetts),

BOSTON, MASS., U. S. A.

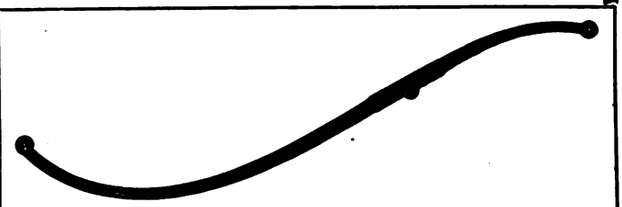
Mention THE HUB.



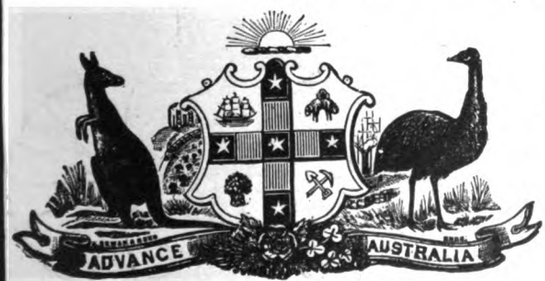
Bow Sockets | **Shifting Rails** | **Weldless Top Joints** | **Top Trimmings**

Cortland Carriage Goods Co.

CORTLAND, N. Y.



DO YOU WANT BUSINESS FROM AUSTRALIA AND THE ISLANDS of THE SOUTH PACIFIC?



Write to J. E. BISHOP & CO., Castlereagh Street, Sydney, Australia, and 165 Queen Street, Melbourne, Australia.

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Now in its Eleventh Year of Publication.

"Coachbuilder and Saddler."

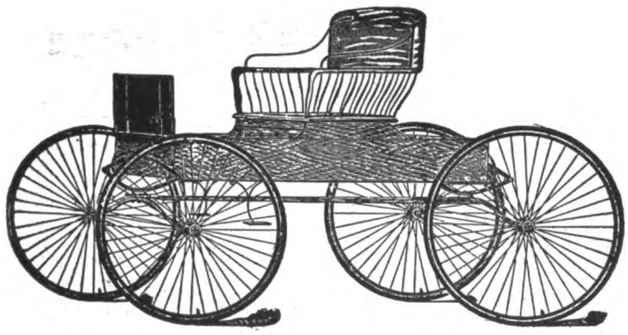
NET ADVERTISING RATES:

Whole Page	One Year	$195.00
Half Page	"	106.00
Quarter Page	"	60.00
Eighth Page	"	31.00

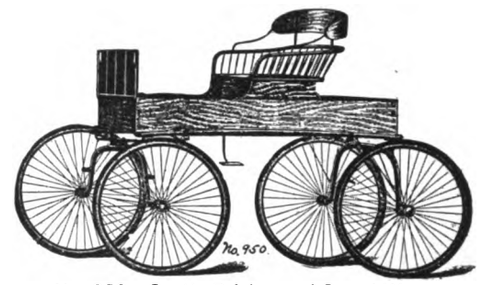
Contracts for less than one year, one-tenth above rates for each month.

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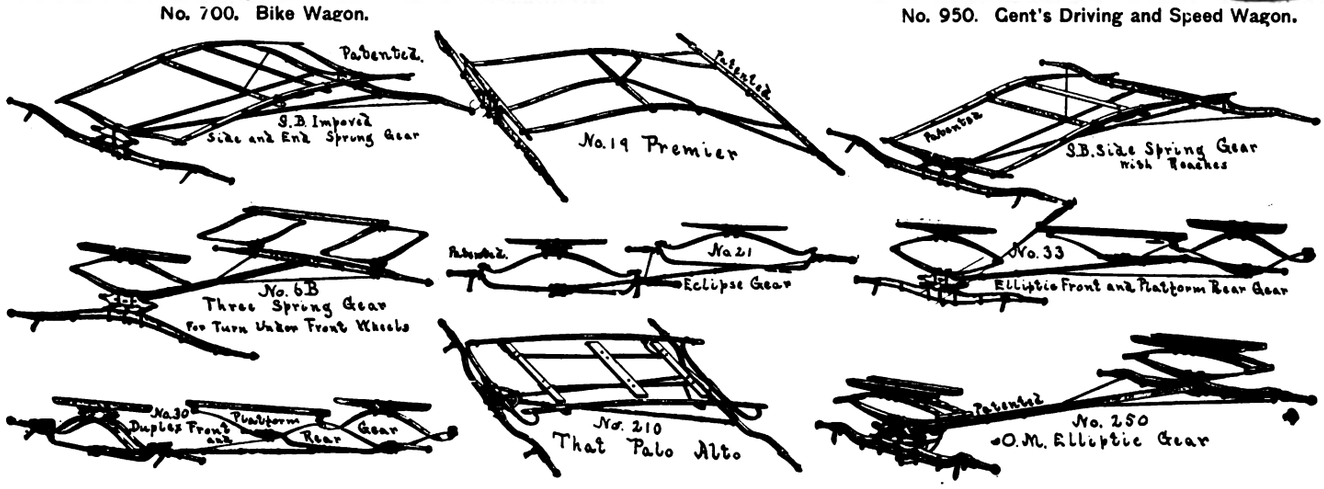
SCHUBERT'S WAGONS IN-THE-WHITE.



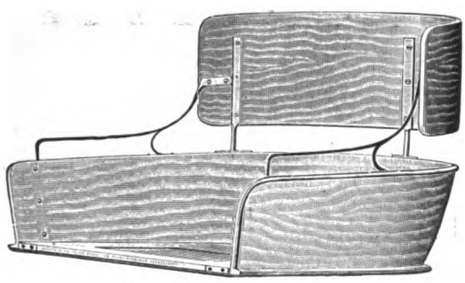
No. 700. Bike Wagon.



No. 950. Gent's Driving and Speed Wagon.

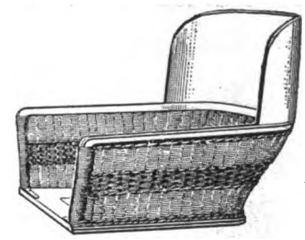


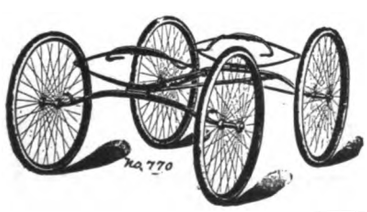
SCHUBERT BROS. GEAR CO., Oneida, N Y., U. S. A.



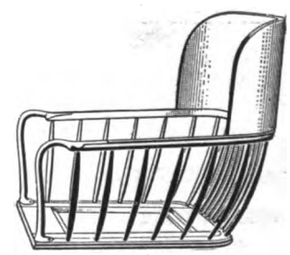
No. 784. Panel Seat.





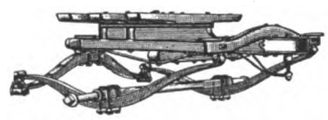


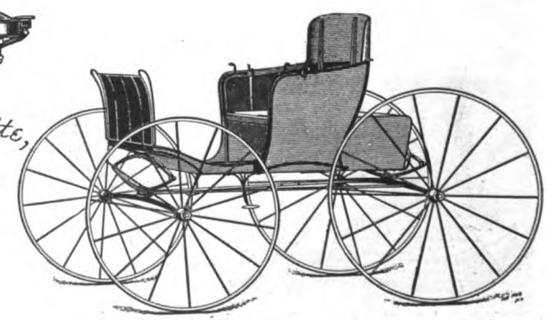






No. 703. Bike Gear.





We manufacture vehicles in-the-white, gears, seats, etc.
Our goods are high class, reasonable in price, and swift sellers.
Schubert Bros. Gear Co.,
Oneida, N.Y., U.S.A.

New Catalogue will be out soon. New Styles. Will exhibit at C. B. N. A., Cincinnati, O.

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EVERY CARRIAGE MANUFACTURER

IS THINKING



PNEUMATIC TIRE WHEEL

Where can we save money?

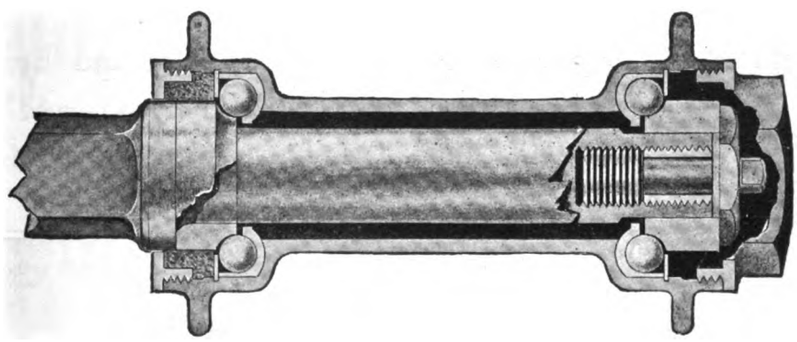
Where shall we purchase?

Who makes the best goods?



CUSHION TIRE WHEEL

READ THE NAME AND PLACE



AND SEND FOR PARTICULARS

PATENT CONE LOCK AND ADJUSTMENT

We aim to please our customers both in quality and price, and that is the reason our business is growing so rapidly. We want to send you a sample set of our Wheels for your most critical examination. Let us tell you what others say about our goods. Once a customer, always one. Don't fail to get our prices and samples before placing contract, as WE CAN SAVE YOU MONEY. Will let you know how.

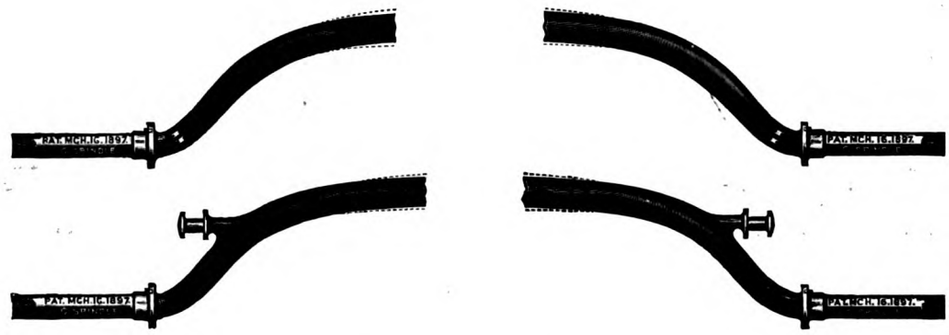
THE JAMESVILLE MFG. CO.

JAMESVILLE, N.Y.

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PREMIER

AXLE PATENTS.



WE hold Patents on Axle Forgings with Shaft and Brace lug design, as shown in cut above (also three other designs), and have licensed the parties named below to make and sell them. Infringers will be prosecuted.

LICENSEES:

The Sheldon Axle Co., Wilkesbarre, Pa.
The Wilcox Mfg. Co., Mechanicsburg, Pa.
The Billings & Spencer Co., Hartford, Conn.
The Premier Mfg. Co., Hartford, Conn.

Premier Mfg. Company,

HARTFORD, CONN.

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1902.



FOR the Season of 1901 and 1902 we will have a larger line than ever, in the way of

Wire Wheels,
Ball Bearing Axles,
Bushings (for Wood Wheels),
Gears,
Forging Axles, etc.,

and trust we may have an opportunity of submitting samples and prices before you close contract for your season's requirements in our line. We go after business anywhere and at any time.



Premier Mfg. Company,

HARTFORD, CONN.

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The Time for New Things.
Are You Looking for Them.
We Have Them.

New Axles for Bike Wagons.
New Axles for High Wheel Jobs.
New Forgings.
New Flat Base-Channel for Cushion Tires.

With our Well-known Reputation.
With our Increased Facilities.
You can't afford to make any arrangements until you have seen us.

Our New Catalogue now in the hands of the Printers.
You will want it. Send for it.

Weston-Mott Co., - Utica, N. Y.

Please mention "The Hub" when you write.

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C.H.A.T.

Helps Secure Situations.

Carriage, Harness and Accessory Traveling Salesmen's Association

OF THE UNITED STATES.

All Commercial Travelers in Above Lines Eligible. No Others. Pays Death Benefits.

Membership Fee, - -	**$3.00**
Annual Dues, - - - -	**1.00**

Employers of Traveling Men eligible to join as associate members on payment of $5.00, and are exempt from all further dues.

Manufacturers of carriages, harness or goods that enter into their construction, jobbers of same, can secure good, reliable and efficient salesmen through our Association, as the members of this Association have the best facilities for knowing all about men who are seeking situations, and none will be recommended unless they are first class and worthy of support.

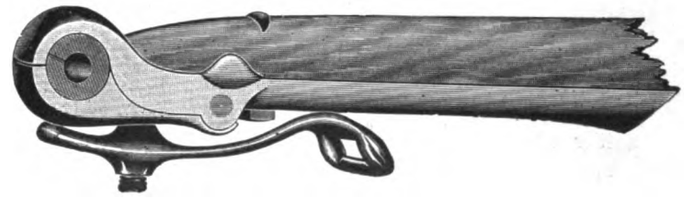
Salesmen in need of a situation, or manufacturers in need of a salesman, address for further information,

P. D. RANDALL, Secretary.

Board of Trade, Springfield, Mass.

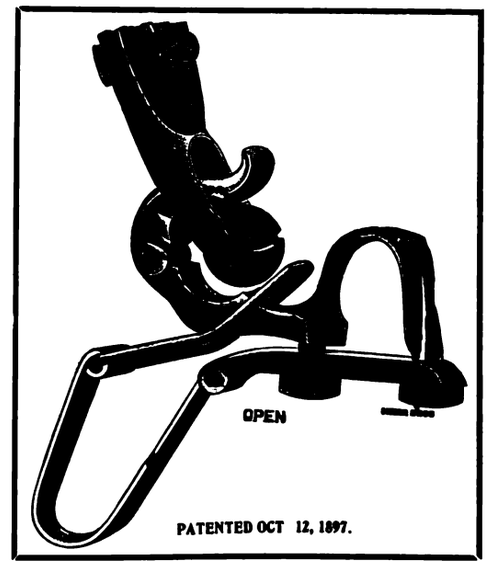
Eccles Adjustable Shaft Eye.

PATENTED AUGUST 28th, 1900.



Ball Bearing Shaft Coupling.

SEND FOR DESCRIPTIVE CIRCULARS AND PRICES.



ALSO GET OUR CATALOG SHOWING FULL LINE OF

Carriage Forgings.

RICHARD ECCLES,

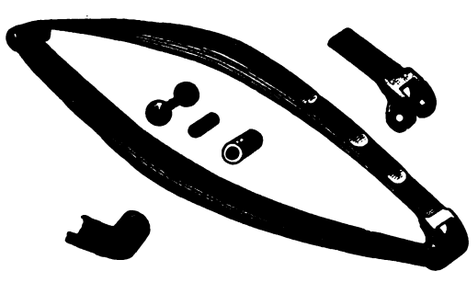
AUBURN, N. Y.

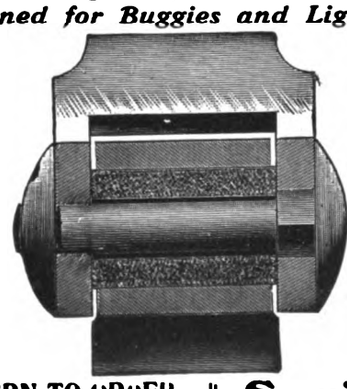
Elliptic and Coach Platform Springs

WITH RUBBER OPEN-HEADS.

LARGE SIZE.—Designed for Broughams, Landaus and Coaches.

SMALL SIZE.—Designed for Buggies and Light Carriages.





The Rubber Open-Head SPRINGS

Work Freely Without Friction.

No Binding or Squeaking in the Heads or Eyes.

SPRINGS OF EVERY STYLE AND PATTERN TO ORDER,

ALSO CURTAIN ROLLERS AND CONCEALED HINGES.

Exclusively First-Class Work.—The Best that Can be Made.

Spring Perch Co.,

BRIDGEPORT, CONN.

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Fernald Quick Shifter and Anti-Rattlers.



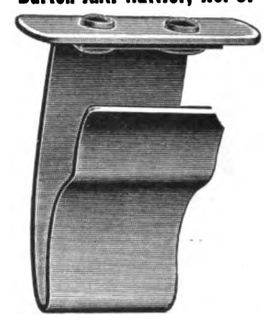
Burton's Anti-Rattler & Bolt Holder No. 1.

PAT. NOVEMBER 15, 1887.

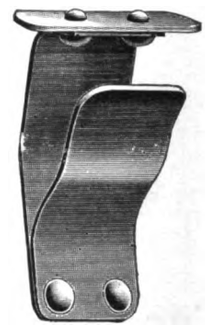
Trade Mark "Burton" Registered Oct. 5, 1897.

Burton's Anti-Rattlers are noiseless, easily inserted or taken out with a hammer without removing bolt, will not lose out, are made from the best steel, thoroughly tested, and will not break. Guaranteed to retain their strength. Where the No. 1 is used bolt cannot lose out.

Burton Anti-Rattler, No. 5.



Trade Mark "Burton" Registered Oct. 5, 1897.

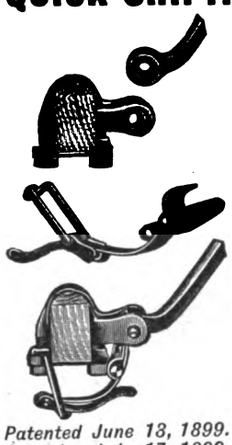


Burton's Anti-Rattler, No. 2.

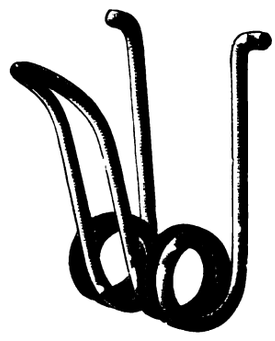
Trade Mark "Burton" Registered Oct. 5, 1897.

..IMPROVED..

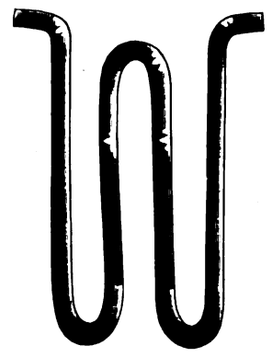
FERNALD QUICK SHIFT.



Patented June 13, 1899. Canada, July 17, 1899.

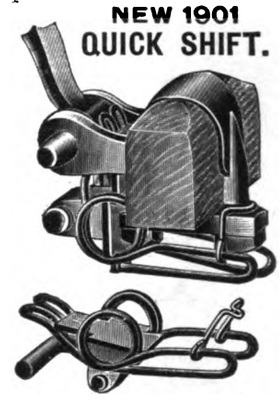


GEM WIRE No. 1.



TEMPERED WIRE DRIVE.

NEW 1901 QUICK SHIFT.



Patent Applied For.

FERNALD MFG. CO., North East, Pa., U. S. A.

C. COWLES & Co..

NEW HAVEN, CONN, U. S. A.

Ask us to quote on Carriage and Coach Lamps, Axle and Saddle Clips, Oval and Flat Corner Irons, "Excelsior" Curtain Fasteners.

MILLED SHACKLE BOLTS, CLOTH AND METAL BUTTONS,

Door Handles, Shaft Tips.

WE ARE HEADQUARTERS FOR ABOVE.

LARGEST VARIETY OF LAMPS FOR

..1901..

Repair Shops, Take Notice.

THE HENDERSON HAND POWER TIRE SETTER IS A MONEY-MAKER.

Worth $500 (only cost $150).



WRITE TO THE

900 Tires Per Month—Best Investment Ever Made.

DALLAS CITY, ILL., August 8, 1901.

This is to certify that on or about July 1st we purchased a Henderson Tire Setter, and up to date, or about one month, we have set 900 tires. We consider it the greatest money maker, and the best investment we ever made. It brings us trade in this line that we otherwise would not get if we did not have it. It does all and more than you claim for it. No up-to-date shop should be without a Henderson Tire Setter. Yours respectfully, WALTER BROS.

STANDARD TIRE SETTER CO., Keokuk, Iowa

NO OIL NO GREASE

The TURNER Roller Bearing Fifth Wheel
The BRADSHAW Spool Roller Bearing Fifth Wheel
The KING Patent Roller Bearing Fifth Wheel

These are by far the BEST and CHEAPEST Roller Bearing Fifth Wheels on the Market for all kinds of Vehicles.

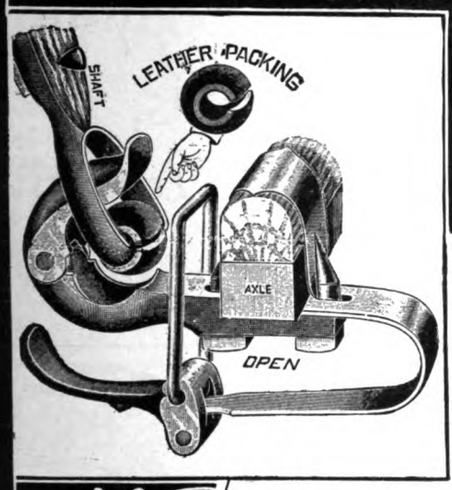
Send for Circulars and Price Lists

The TURNER MANUFACTURING COMPANY

245 BROADWAY, NEW YORK

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THE BRADLEY SHAFT COUPLING



WILL NOT

THE ONLY TOOL YOU NEED



RATTLE YOU

BECAUSE THERE IS NOTHING ABOUT IT TO RATTLE

NOISELESS—FLAWLESS—This concerns your customers.
SALEABLE—PROFITABLE—This concerns You.
Ask us how, when and why.

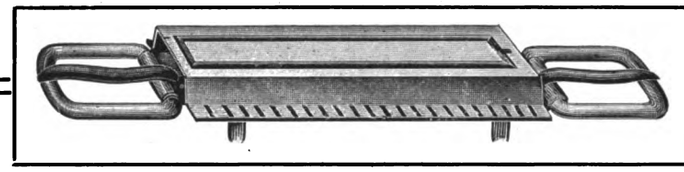
C. C. BRADLEY & SON,

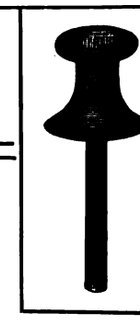
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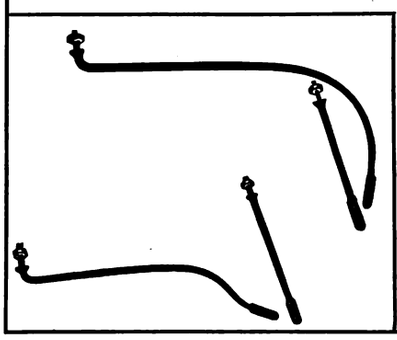


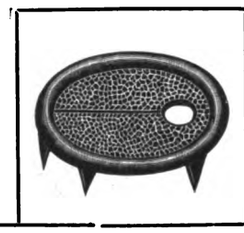
WE MANUFACTURE

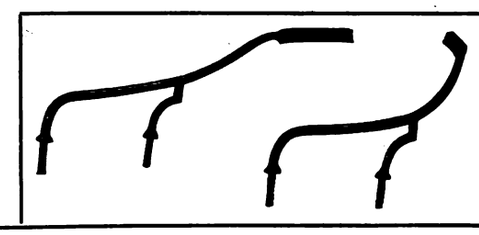
Lamp Fingers, Toe Rails, Extension Body Irons, Solid Foot Stick Seat Arm Rails,

Canopy Top Standards. Surrey and Buggy Arm Rails.

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THE "TRACER" TELLS.

THE "TRACER" TELLS Isn't it worth your while to learn what other Wholesale merchants know about Retailers who seek credit from you? The "Tracer" tells.

THE "TRACER" TELLS Isn't it worth your while to learn from other Wholesale merchants what record your would-be customer has made with them? The "Tracer" tells.

THE "TRACER" TELLS Isn't it worth your while to be able to ask several thousand merchants everywhere what they know about a man you want to know about? The "Tracer" tells.

THE "TRACER" TELLS Isn't it worth while to learn that one of your customers, who is prompt in New York, Philadelphia or St. Louis, is getting *very slow pay* in Chicago and Boston? The "Tracer" tells.

THE "TRACER" TELLS Isn't it worth while to learn your customers' inside business history, not from outside guesses, but from inside records; *the actual experience of those who have dealt with them?* To learn those things that determine *character* and *business ability* as well as *financial strength?* The things that make you trust or distrust a man? The things that come up in actual business dealings, but which an outsider cannot know? The "Tracer" tells.

THE "TRACER" TELLS Is he honest? Is he tricky? Is he careful, prudent, shrewd? Has he the qualities of success? Does he cancel orders unjustly? Does he make false claims for deductions? Is his record good or bad? Are his methods good or bad? The "Tracer" tells.

THE "TRACER" TELLS and it is the *only* thing that tells. Every business man leaves a record, widely scattered in the ledgers and in the minds of merchants far apart. That record, if gathered, is the best proof of what a man actually *is*, in his business relations. The "Tracer" gathers these scattered leaves and makes the record complete. The "Tracer" goes to thousands of Wholesale merchants everywhere. From them come a dozen detached bits of experience, concerning one man: together they show his whole business past, and his present condition. Has he ever bought? The "Tracer" tells. Is he getting slow? The "Tracer" tells. Is it time for caution? The "Tracer" tells.

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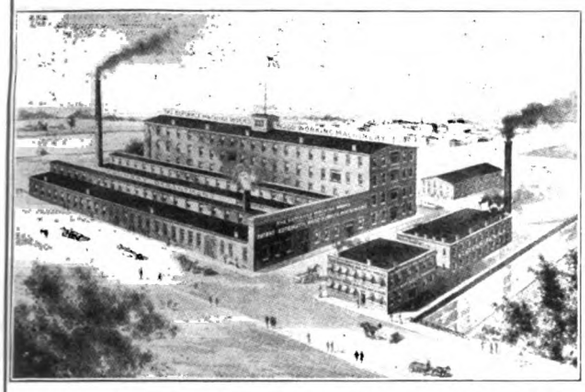
New York, Buffalo, Niagara Falls, Cleveland, Cincinnati, Chicago.

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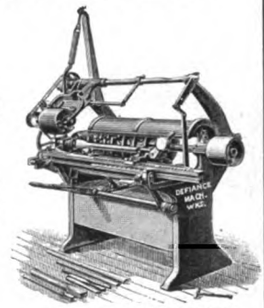
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DEFIANCE, OHIO



Inventors and Builders of **AUTOMATIC WOOD-WORKING MACHINERY**

FOR **CARRIAGE** AND **WAGON BUILDERS**

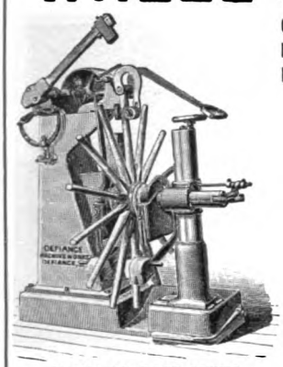


AUTOMATIC SPOKE LATHE.

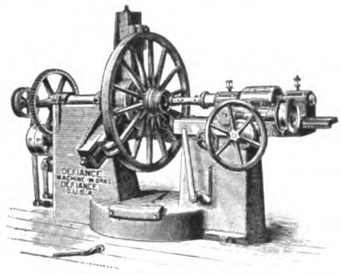
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Complete Equipments Furnished for Making Hubs Spokes, Rims, Shafts, Poles Neck-Yokes and Single-Trees. Also Machinery for making Hoops, Handles, Bobbins and Oval Wood Dishes.

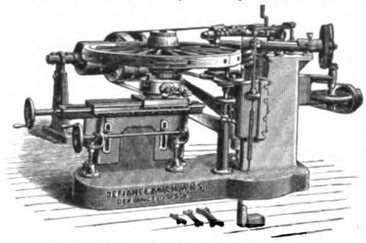
LONDON OFFICE, 71 QUEEN STREET



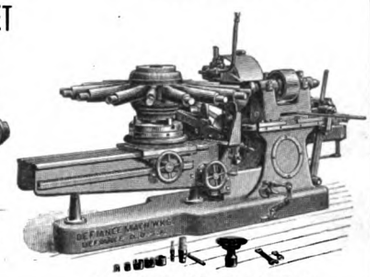
AUTOMATIC SPOKE DRIVER.



AUTOMATIC WHEEL BOXER.



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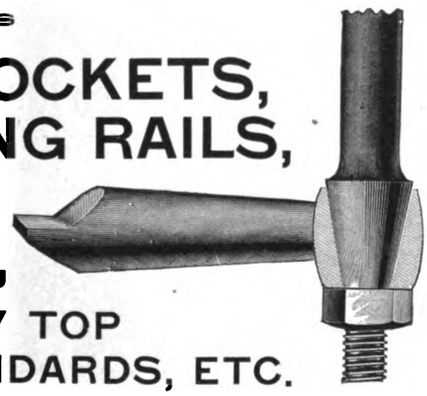


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OUR LINE EMBRACES

BOW SOCKETS, SHIFTING RAILS, TOP JOINTS,

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TAPER SHANK CANOPY TOP STANDARDS

MADE TO ANY PATTERN.

Will not rattle, even without nut.

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CORTLAND, N. Y.

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Successors to Port Chester Bolt & Nut Co.

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TIRE BOLTS.

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Our bolts will be found the most reliable of any in the market.

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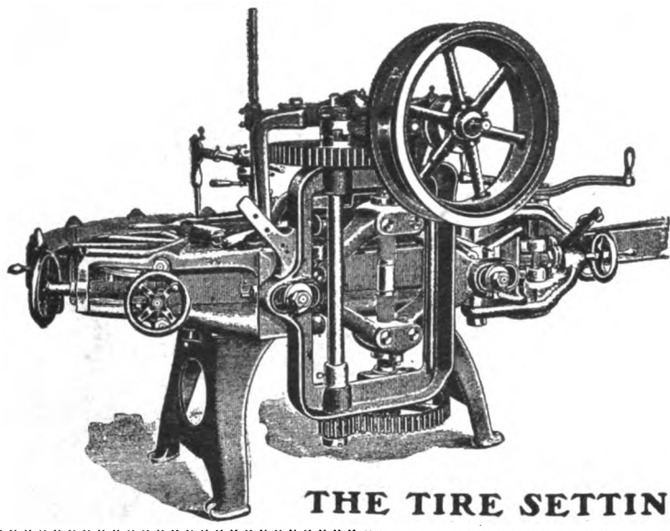
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HAND AND POWER MACHINES

To Supply the Demands of the

CARRIAGE AND WHEEL TRADE, AND ALSO THE BLACKSMITH AND GENERAL REPAIRER.

A power machine with an automatic attachment, and where the operator has absolute control of the machine; can stop or start it instantly at any point in its operation.

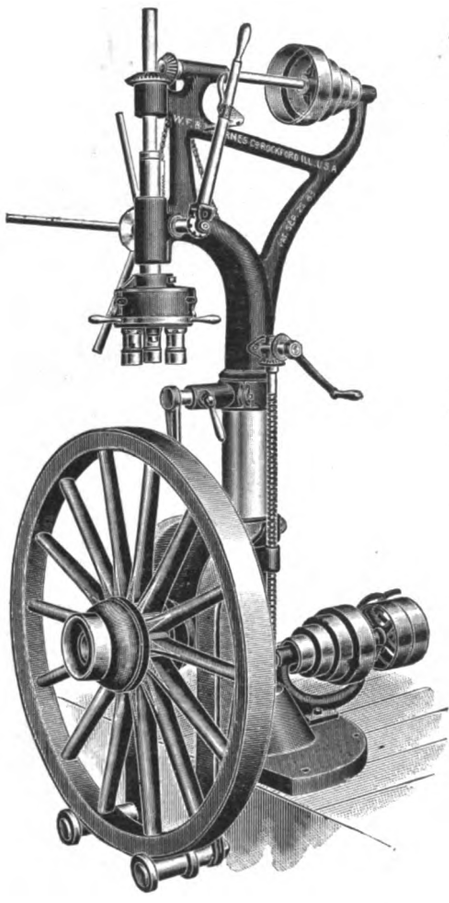
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We shall be at the Pan-American Exposition in Buffalo. Our machine will be in operation at the factory of the Buffalo Spring & Gear Co., three minutes' walk from the grounds.

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A New **Tire Drill**

Most rapid working tool on the market for this class of work.

Capacity:

Any wheel up to 56 in. diam.
Any width of tire up to 6 in. wide.
Any hub up to 10 in. diam.

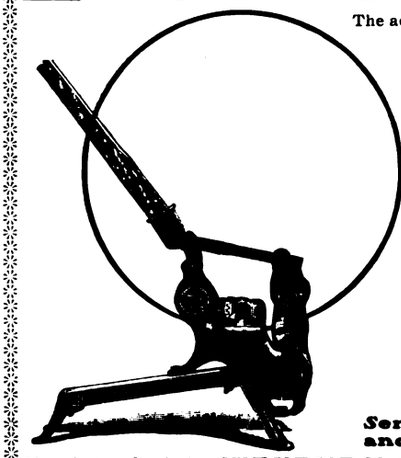
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The Ideal Tire Upsetter



The advantages of the ideal are:

The tire cannot kink.
One man can operate it.
One movement does the work.
It will shrink light Buggy tire.
It will shrink Heavy Wagon tire.
It will shrink Truck tire.
It will shrink perfectly all kinds and thicknesses of tire.
It is the easiest handled.
It is the most durable.
It is the latest and best.

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Manufactured only by **WEYBURN & DRIGGS CO.,**

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Climax Welding Compound.

It Welds Steel Tires, Axles and Springs as Easily as Iron.

HARDWARE DEALERS SELL IT.

Samples sent on receipt of 10c. in stamps.

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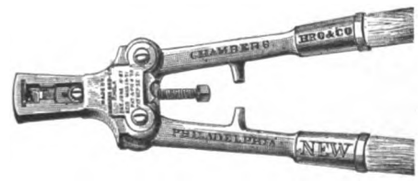
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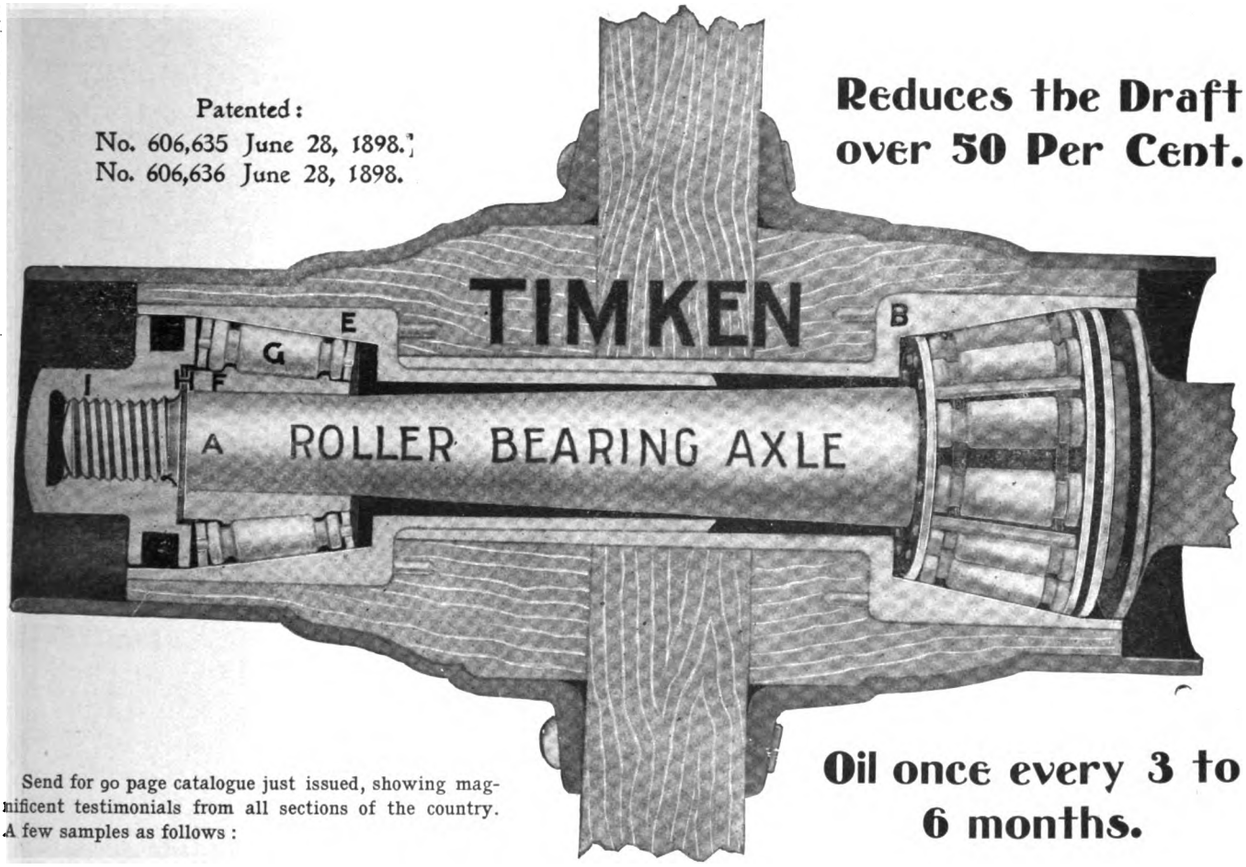
52d Street, below Lancaster Avenue,

Philadelphia, Pa.

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No. 606,635 June 28, 1898.
No. 606,636 June 28, 1898.



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THE COLUMBIA CARRIAGE CO.,
By J. E. WRIGHT, V. Pres. & Mgr.

BOSTON, April 18, 1901.

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3100 N. Second St., St. Louis, Mo.

GENTLEMEN—I have tried your Roller Bearing Axles on my private brougham and find them very satisfactory. I should recommend them to all who wish an improvement on their carriage

Yours respectfully,
CHARLES KENNY.

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GENTLEMEN—During the past year we have furnished quite a number of vehicles with Timken Roller Bearing Axles and our customers seem to be delighted with them.

Mr. Bower, the President of this Company, has been using a surrey equipped with these axles for about one year, and is highly pleased with them.

We consider the Timken Roller Bearing the simplest and most practical anti-friction axle made and take pleasure in recommending it.

Very truly yours,
CONNERSVILLE BUGGY CO.,
By SCOTT MICHENER, Secy.

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St. Louis, Mo.

GENTLEMEN—Since last fall we have used quite a number of sets of your Roller Bearing Axles, ranging in size from 1⅛" to 2½", with results so decidedly satisfactory as to insure our using a great many more.

We have two wagons, exactly alike, for drayage of carriages. One is equipped with your Roller Bearing Axle and is used between our factory and Portland. The teamster, who has for years been on a wagon just like it with old fashioned axles, reports a great difference. We put our lightest horse into this wagon on account of its light draught and the teamster says this horse (weighing 300 lbs. less than the large horse) will haul the same load with ease, while the big horse has to exert himself pretty hard.

We also turned out a wagon for a fruit concern, built to carry 3,000 lbs. The horse used in this wagon weighs 1,100 lbs. and the owner says he has been carrying 5,000 lbs. on this wagon ever since he had it, and shall next winter sell his other wagons and replace them with wagons equipped with Timken Roller Bearing Axles on account of the increased load he can carry.

As far as our experience and observation goes, Timken Roller Bearing Axles are a very great success.

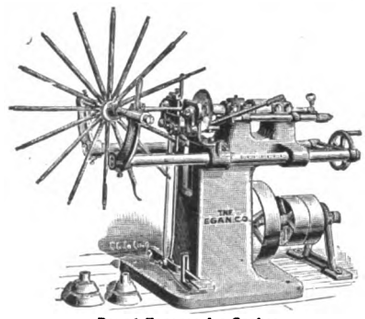
Yours truly,
Dict. by F. O. B. F. O. BAILEY CARRIAGE CO.

TIMKEN ROLLER BEARING AXLE CO.,

ST. LOUIS, MO.

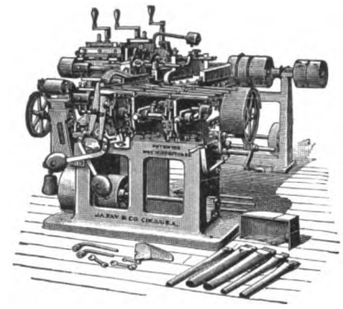
BRANCHES { NEW YORK—1769 Broadway.
BOSTON—29 Beverly Place.
CHICAGO—New York Life Building.
PHILADELPHIA—Fulton & Walker Co.

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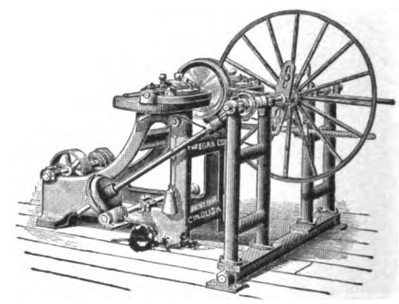
Round Tenoner for Spokes

"SINGLE MACHINES"



Automatic Spoke-Threating Tenoning and Mitering Machine

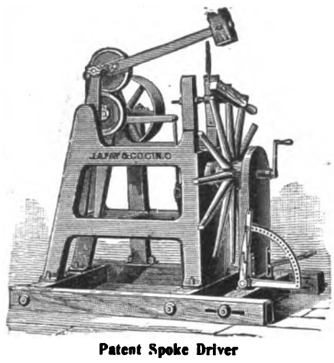
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New Improved Wheel Rim Sander.

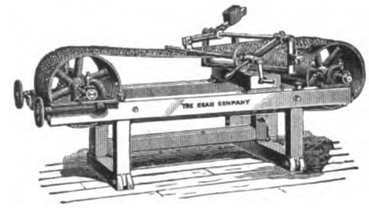
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FOR EVERY PURPOSE SEND FOR CATALOGUE AND INFORMATION



Patent Spoke Driver

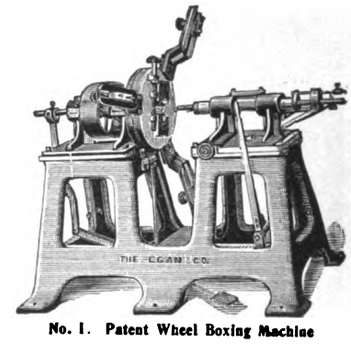
"GRAND PRIX" PARIS, 1900



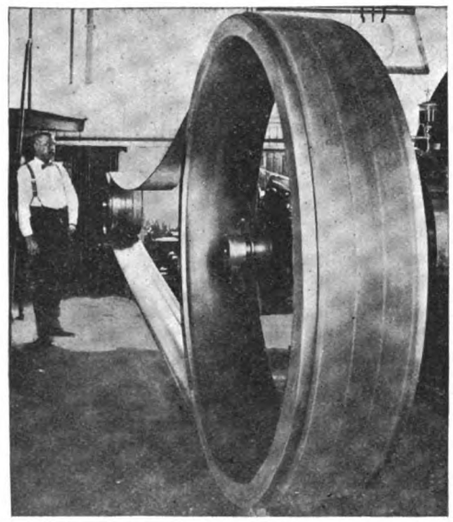
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No. 1. Patent Wheel Boxing Machine



CLING-SURFACE

Will permanently prevent the belts in your plant from slipping and allow them to run easy.

Your machines will be able to do more work.

You save much time now spent in taking up belts.

And Cling-Surface makes and keeps the belts pliable, elastic and in perfect condition. They are not sticky.

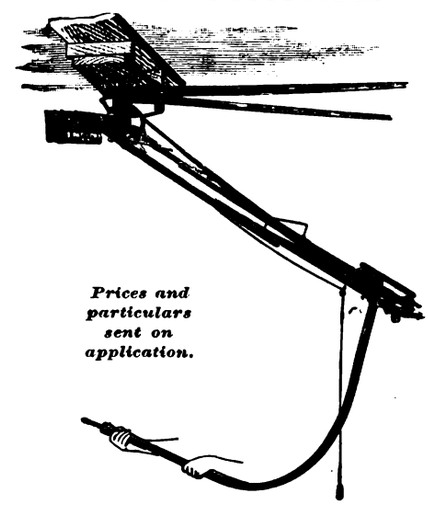
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Flexible Boring Machine.

Perfected.

Bores holes at any angle within a circle of twenty feet or more. **USES FLAT BELT.** Has bearings of friction pulley covered, thus overcoming every objection made to the old machine, of which there are thousands in daily use.



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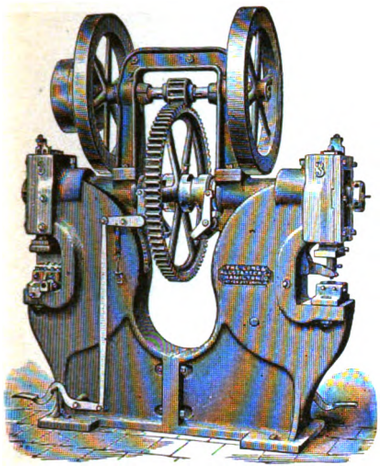
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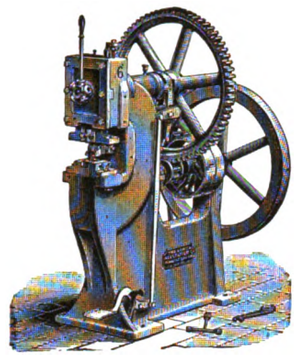
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Carriage Shops
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THE LONG & ALLSTATTER CO.

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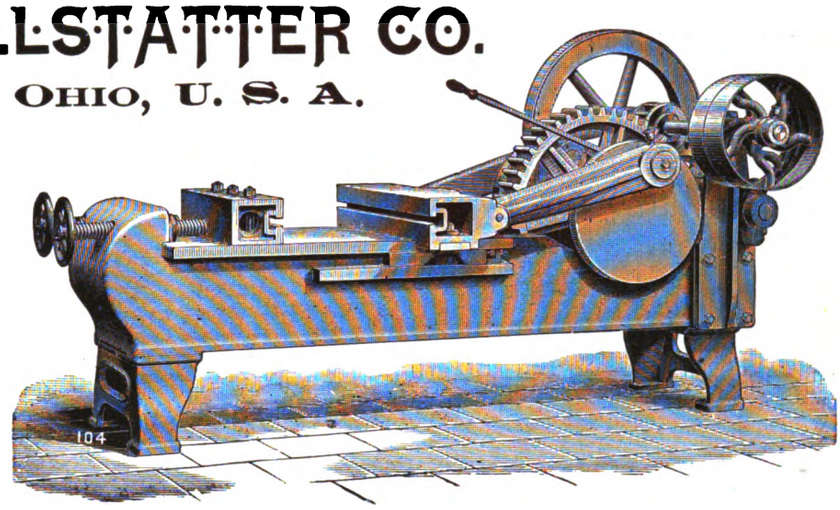
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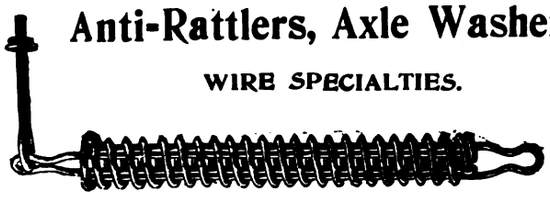
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IMPROVED POLE SPRING.

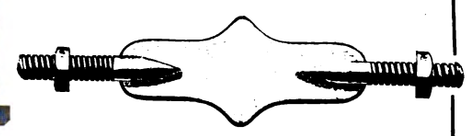
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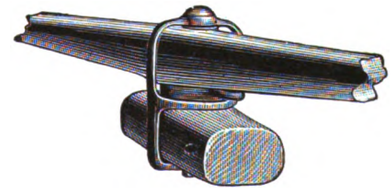


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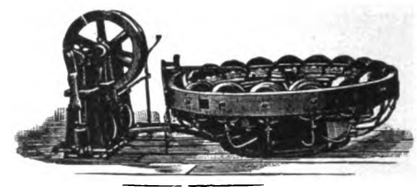
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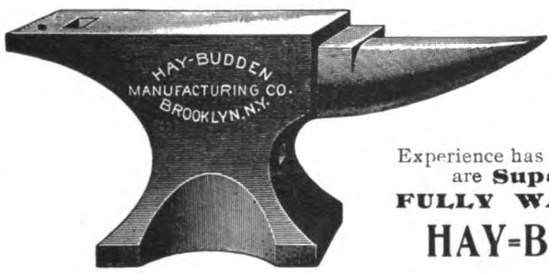
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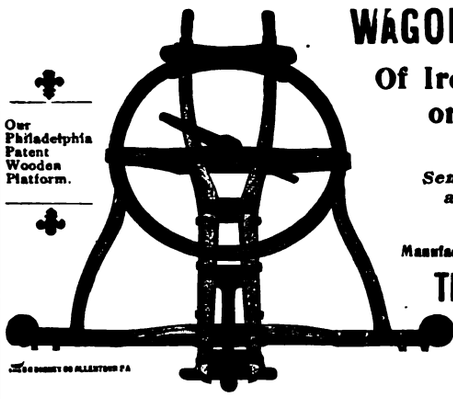
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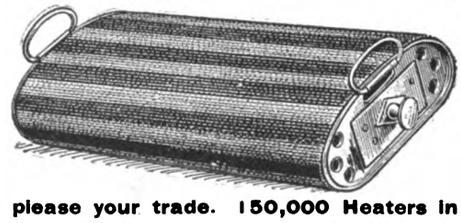
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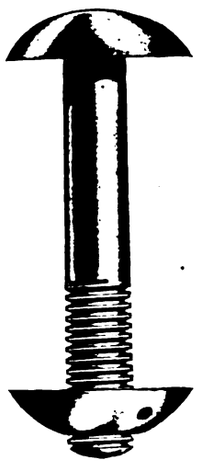
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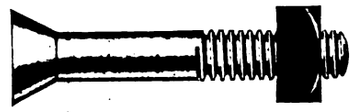
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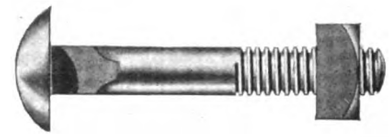
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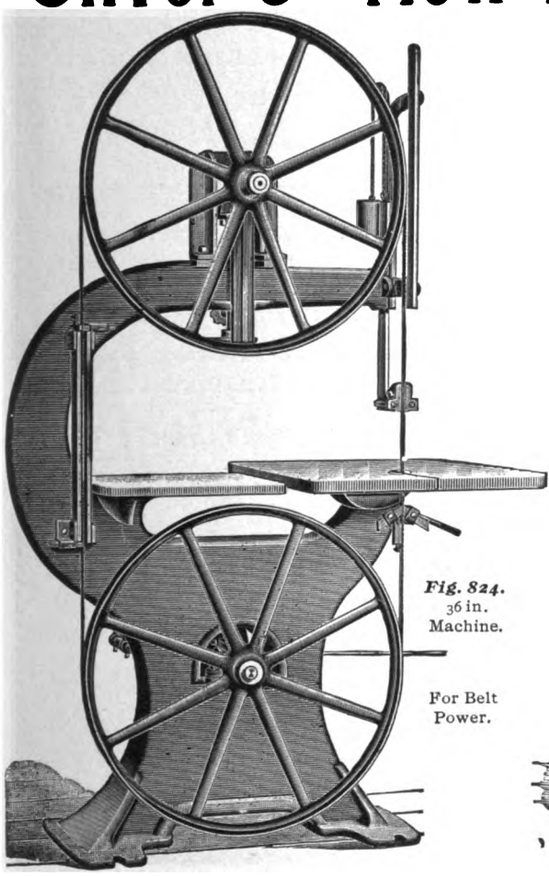


Fig. 824. 36 in. Machine. For Belt Power.

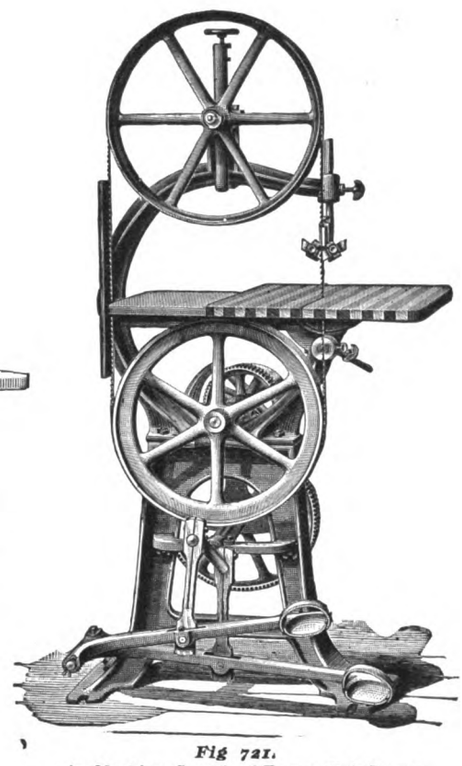


Fig 721. 20 in. Machine. Combined Foot or Belt Power.

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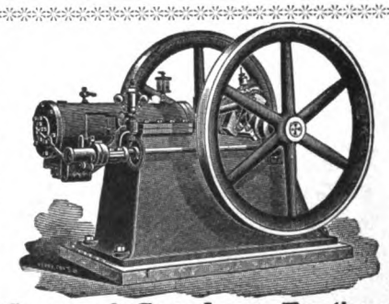


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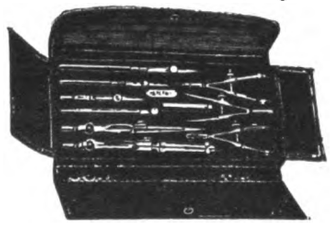
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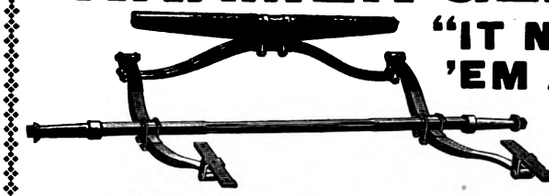


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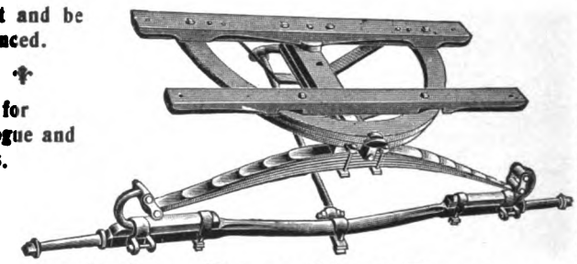
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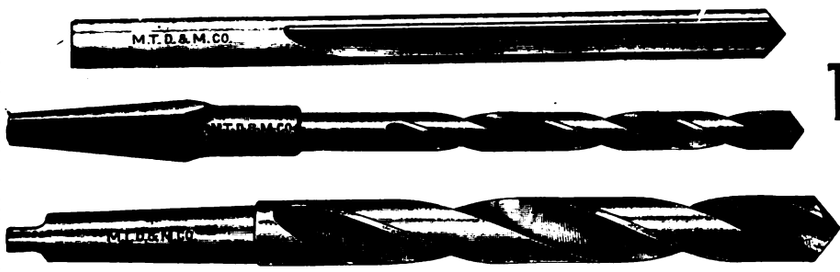
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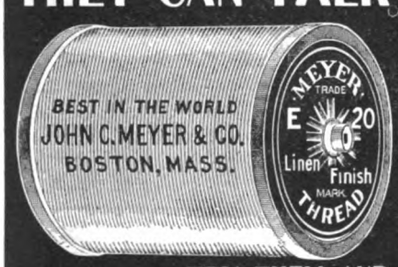
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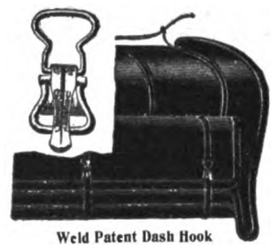
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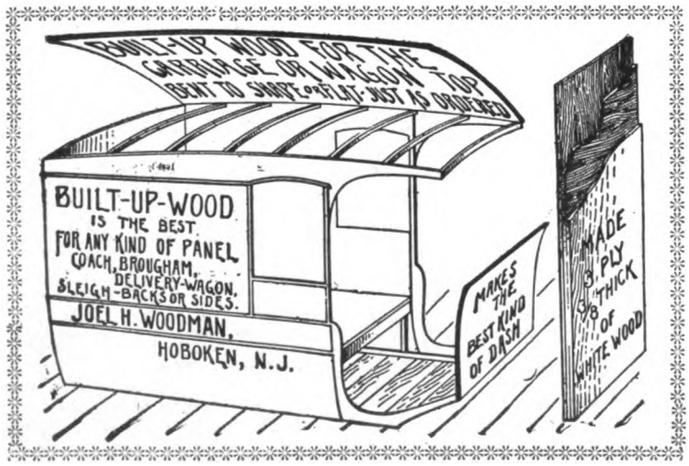
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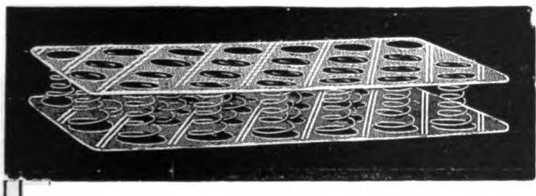
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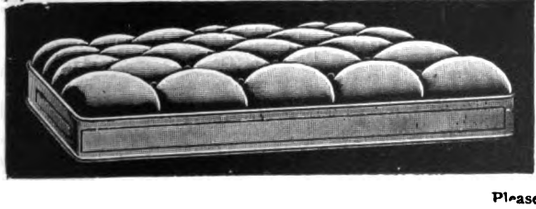
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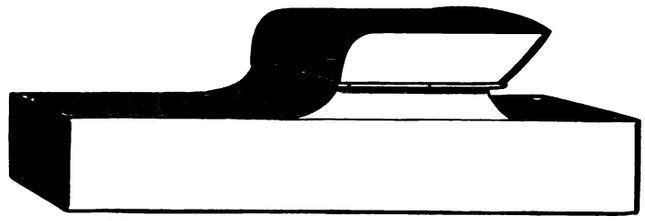
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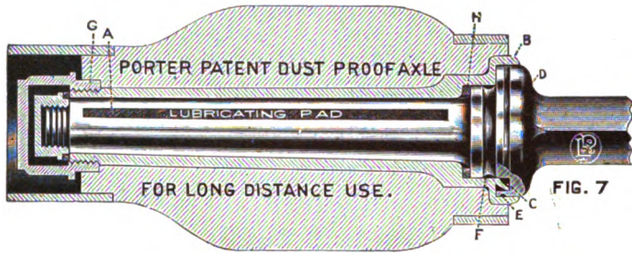
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FOR LONG DISTANCE USE



The only "2,500 Mile" Standard Axle in existence.

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This axle is fitted with the Famous Porter Patent Dust Proof Collar and V-shaped extension, making it absolutely dust and water-proof. 7,000 sets in use. Never had a ball crush. Never had a call for repairs. Write for particulars. Prices now within reach of all.

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Makers of Fine Carriage Varnishes,

CLEVELAND, OHIO.

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We make them in both Buggy and Surrey size, and of the necessary patterns to bolt or to clip on spring.

Some makers prefer one style, some another. We aim to please both.

You can readily see the advantage of using a Rolled Steel Hanger, and particularly as our many facilities enable us to produce them in the most economical way and to sell them at a price that leaves no excuse for using inferior goods.

That's the story in a nutshell, and if you do not know just what we can do for you in this line it will pay you to write and get posted.

The Cleveland Hardware Co.,

Cleveland, Ohio.

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A Rubber Tire Argument.

IF

One could only believe:—

That new and inexperienced firms can make as good or better tires than manufacturers having years of experience making successful tires;

That people for years making unsuccessful tires have suddenly made great discoveries enabling them to produce better and cheaper goods than their competitors;

That it is safe to use makes of tires which of their present compound have been in use for but a short time, and that with only a partial success;

If, in short, one could only believe all that is told them these days about rubber tires,

THEN

It would be easy to believe:—

That it is possible to buy first-class pure rubber tires for less than the rubber in any heretofore successful tire is worth;

That the years of successful experimenting by reliable firms has been wasted and that their tires have suddenly become worth less than the raw material in them is worth;

And that, in fact, pure rubber is no longer an essential ingredient to a successful tire.

BUT

The facts are, no substitute for rubber has been discovered, and that no tire containing less rubber or rubber of a cheaper quality than that used by the Goodyear Tire & Rubber Co. is or ever will be a success.

Neither is it possible for a small factory poorly equipped, and with a small trade to produce tires as cheaply as the largest factory in the world with the finest and most perfect equipment known to the industry and having by far the largest output.

THE TROUBLE IS

During the season of 1900-01, the best trade all went to a few firms which stuck to making good tires, and the "other fellows'" struggles to get into the business strictly by cutting prices, and the impossibility of their making good tires for the prices they are compelled to quote, has compelled them to discard the use of pure rubber, and in its place load their tires with reclaimed rubber and other equally dangerous substitutes, and bend their energies to producing that which looks as well as the genuine. If this material were just as good, the Goodyear Tire & Rubber Company would have been using it for years; it is nothing new. But it is not. If the tires were just as good, we would have nothing to say, but as it is, we want the trade to know that when it comes to producing cheap tires, no one can undersell the Goodyear Tire & Rubber Co. ***on a given grade of tire.***

We want the trade to know that the reason Goodyear Tires cost a little more than others is because they are *made of rubber.* It is easy to "guarantee" a tire, but before you buy, insist that the manufacturers show that the tires they offer have had at least one year's successful operation, made of exactly the compound they offer. Goodyear tires have had three years and will continue to be made of exactly the same rubber.

DON'T FORGET

If it is merely low price you want, we are making some of that kind of tire, but please do not ask us to compete in price with tires not tried, not tested and not made of rubber, with our RUBBER tires. The Goodyear "Wing" tire is the most successful tire in the world, and is made only by

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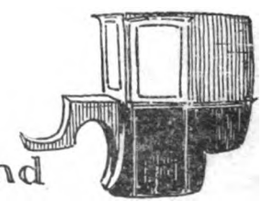
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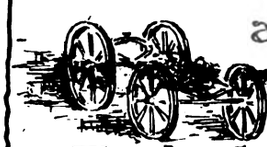
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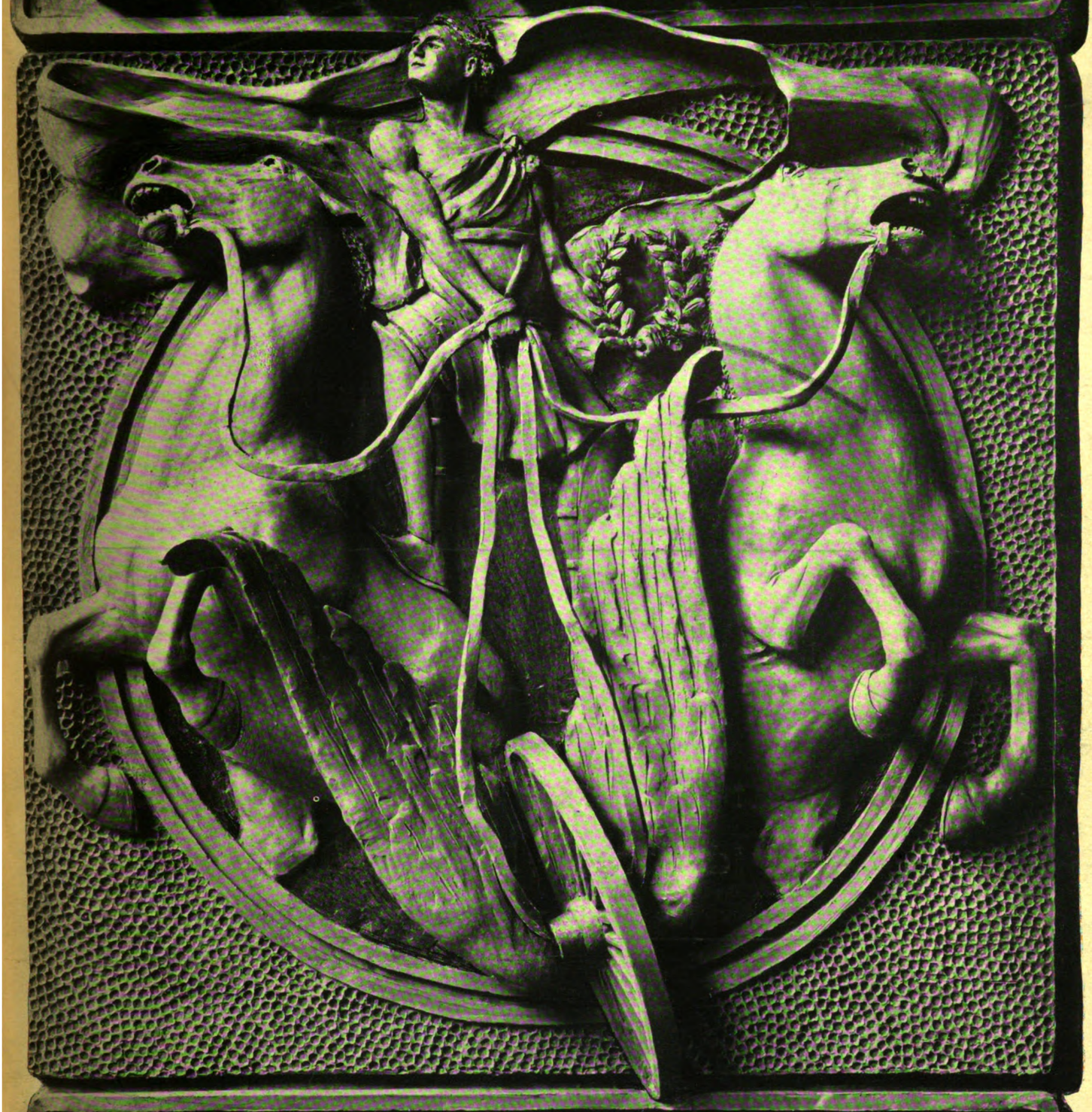
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24 & 26 MURRAY ST. NEW YORK

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CHICAGO.

Vol. XLIII., No. 7 October, 1901 [illegible]

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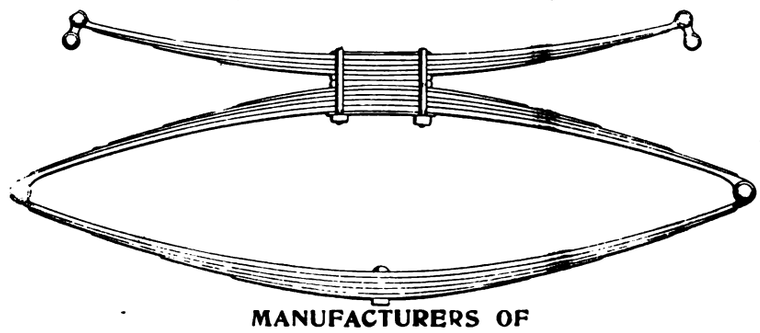
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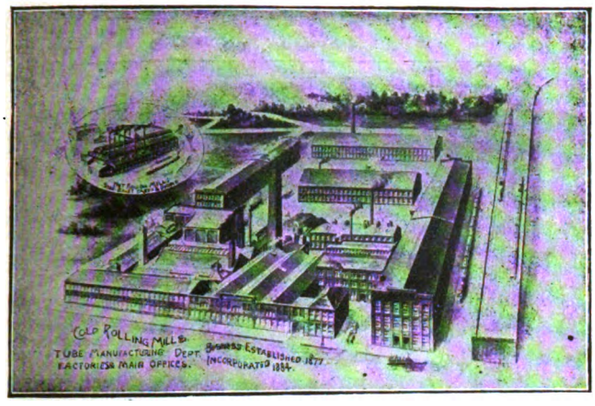
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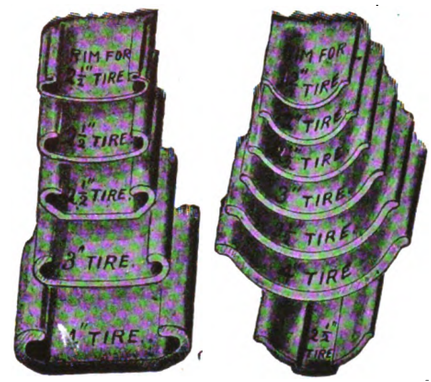


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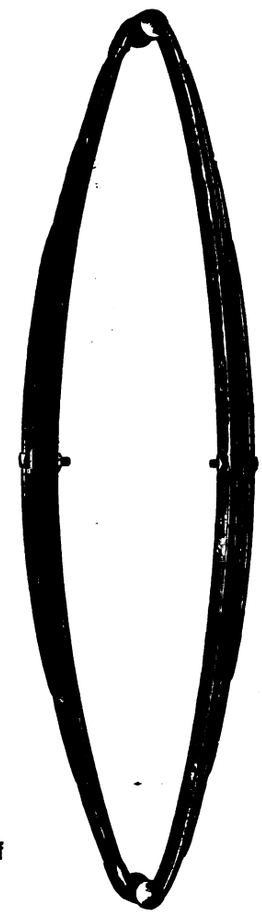
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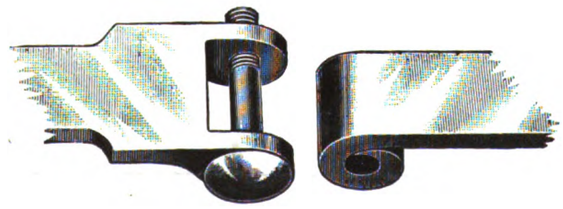
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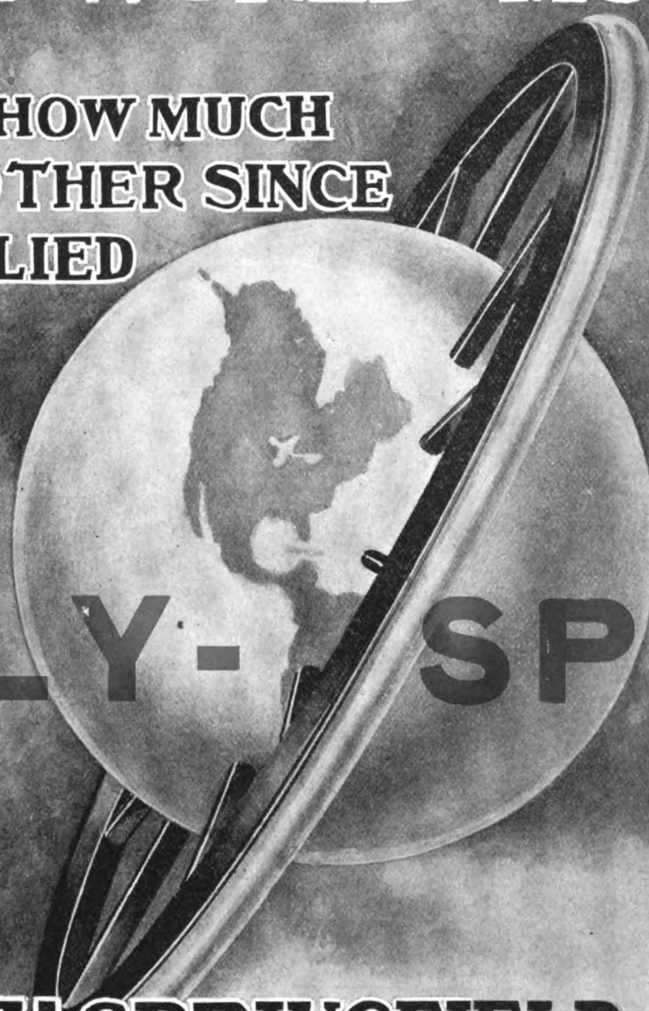
Steel Tire.

All Grades and Sizes of Spring Steel.

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THE WORLD MOVES

BUT-HOW MUCH SMOOTHER SINCE SUPPLIED WITH



KELLY-SPRINGFIELD TIRES

THE BEST SOLID RUBBER TIRE ON EARTH.

KELLY-SPRING

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EXTRA
WHITE LEAD.

It makes a smooth coating over which subsequent coats of color are easily applied, preserving and preventing the color from cracking.

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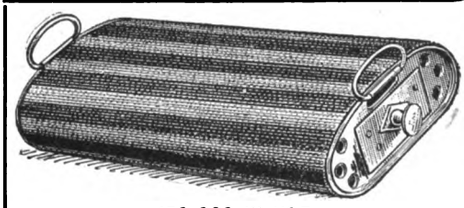
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Briefly stated, our proposition is to furnish you better, more attractive lamps, for less money than you can obtain elsewhere. We will be at the Cincinnati Exposition prepared to demonstrate this proposition. We will not only demonstrate this proposition then, but at any time and any place that will suit your convenience.

Yours truly,
RICHMOND MFG. CO.

RICHMOND MFG. CO.
RICHMOND, IND.

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TRADE VALENTINES VARNISHES MARK.
"THE STANDARD FOR QUALITY."

Manufacturers of

VALENTINE
HIGH GRADE
Coach and Car Varnishes
and Superfine Colors.

LAWSON
Coach, Furniture and
House-Painters'
Varnishes and
Japans.

VALENTINE & COMPANY

NEW YORK,
57 Broadway

CHICAGO,
390 Wabash Avenue.

BOSTON,
170 Purchase Street.

PARIS,
21 Rue de Lapp

FACTORIES:
NEW YORK. CHICAGO.

ESTABLISHED
1832.

SWEET { Hub Wheels
MAKE FINEST
Bike Wheels

Made with Twelve Spokes...
3¼ Diameter Hubs or Larger

CAN FURNISH THEM FITTED WITH

Crescent
Flat Base
V-Shaped CHANNELS

Write for Prices and order Sample Set.

SHORTSVILLE WHEEL CO.,
SHORTSVILLE, N. Y.

Your Catalogue
IF IT ATTRACTS, RECEIVES THE CUSTOMER'S UNDIVIDED ATTENTION.
VEHICLE CATALOGUES
OUR SPECIALTY
ASK FOR SAMPLES & PRICES
WE'RE NOT TOO HIGH.



DICKINSON-BROS.
ENGRAVERS - PRINTERS
GRAND RAPIDS, MICH.

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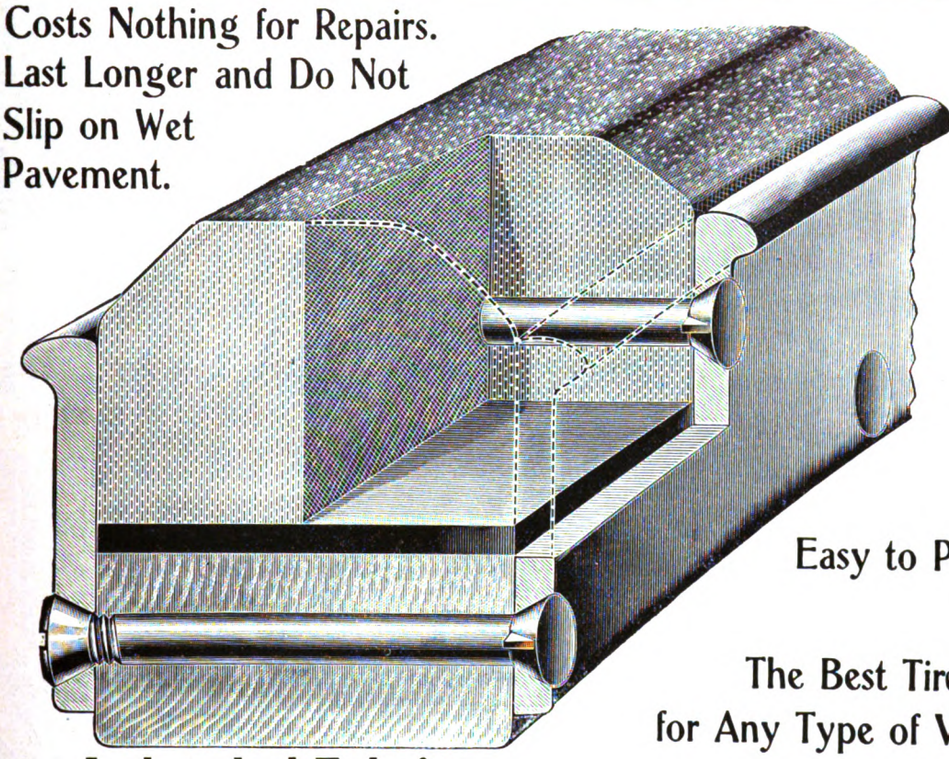
INDURATED

A New Departure

IN

TIRES

Costs Nothing for Repairs.
Last Longer and Do Not
Slip on Wet
Pavement.



Easy to Put On.

The Best Tire
for Any Type of Vehicle.

Indurated Fabric

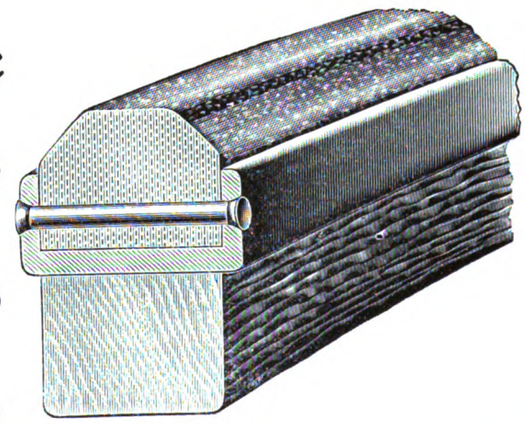
Automobile and Carriage

TIRES,

Made Under Stevens Patent.

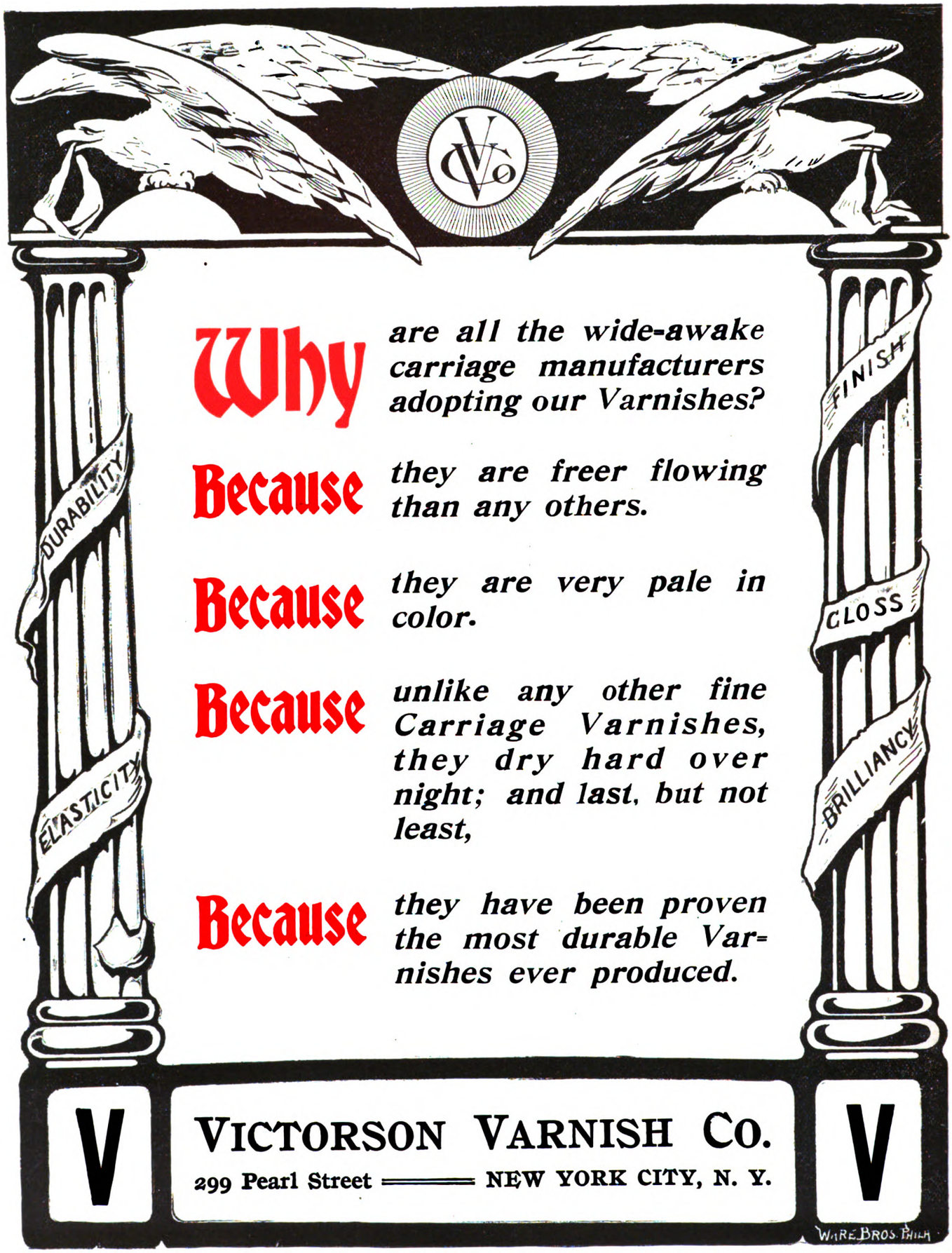
Auto-Dynamic Co.,

140 W. 39th St.,
NEW YORK CITY.



FABRIC

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Why *are all the wide-awake carriage manufacturers adopting our Varnishes?*

Because *they are freer flowing than any others.*

Because *they are very pale in color.*

Because *unlike any other fine Carriage Varnishes, they dry hard over night; and last, but not least,*

Because *they have been proven the most durable Varnishes ever produced.*

VICTORSON VARNISH CO.

299 Pearl Street ═══ NEW YORK CITY, N. Y.

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DIAMOND SOLID TIRES.

Advantages.

Splendid Facilities.
Scientific Compounding.
Economical Production.
Up to date Methods.

Results.

Reliable Tires.
High Grade Rubber.
Minimum Prices.
Satisfied Customers.

"Won Their Way the Result of Merit."





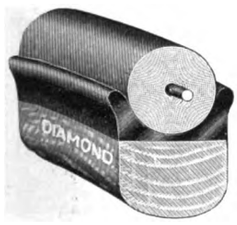
POLICY.

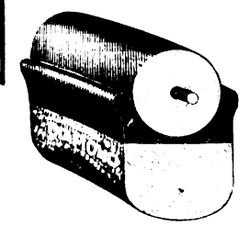
Manufacturers
Business
Exclusively

D TRADE MARK D

We-Ask-
No-Favors
Beyond-a-
Comparison-of

Quality and Prices.





EXHIBITORS.

Dealers' Exposition, Grand Central Palace, New York.

Week October 14 to 19, 1901. The Cincinnati Conventions, October 20 to 26 and November 18 to 23.

We cordially invite you to call at our Exhibit. Let us demonstrate the merits of Diamond Tires to you. A half hour's talk will be to your interest as well as ours.

Quick Delivery from following Points.

NEW YORK,	1717 Broadway.
CHICAGO,	429-431 Wabash Ave.
BOSTON,	234 Congress St.
PHILADELPHIA,	435 No. Broad St.
DETROIT,	310 Woodward Ave.
BUFFALO,	9 West Seneca St.

THE **DIAMOND RUBBER CO.**

Headquarters, Offices and Works:

AKRON, OHIO, U. S. A.

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W. S. SHULER & THOMAS SPRING CO.

THE

THOMAS

SPRING.

THE THOMAS BIKE GEAR AND
THE THOMAS PATENT SPRING

will be on exhibition at both the

... New York and Cincinnati Conventions ...

Manufacturers and Dealers should not fail to critically inspect this greatest improvement in the vehicle industry. The lightest, most practical and durable spring and gear on the market. Will increase your sale of vehicles, and enlarge your profits. Orders placed at the Conventions will be filled promptly.

Our latch-string will hang on the outside of our exhibit space *COME AND SEE US.*

W. S. SHULER & THOMAS SPRING CO.

SOLE MANUFACTURERS

AMSTERDAM, N. Y.

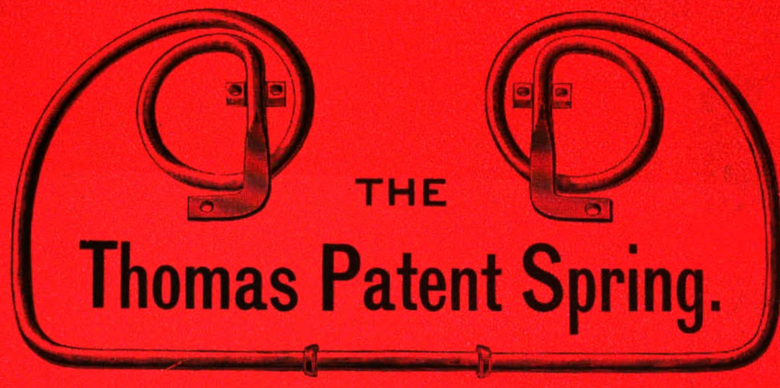
U. S. A.

Detailed description on opposite page

AMSTERDAM, N.Y.

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W. S. SHULER & THOMAS SPRING CO.,



THE
Thomas Patent Spring.

No Special Body or Gear necessary.

A set with all connections weighs fifteen pounds.

Saves thirty-five pounds on weight of Gear.

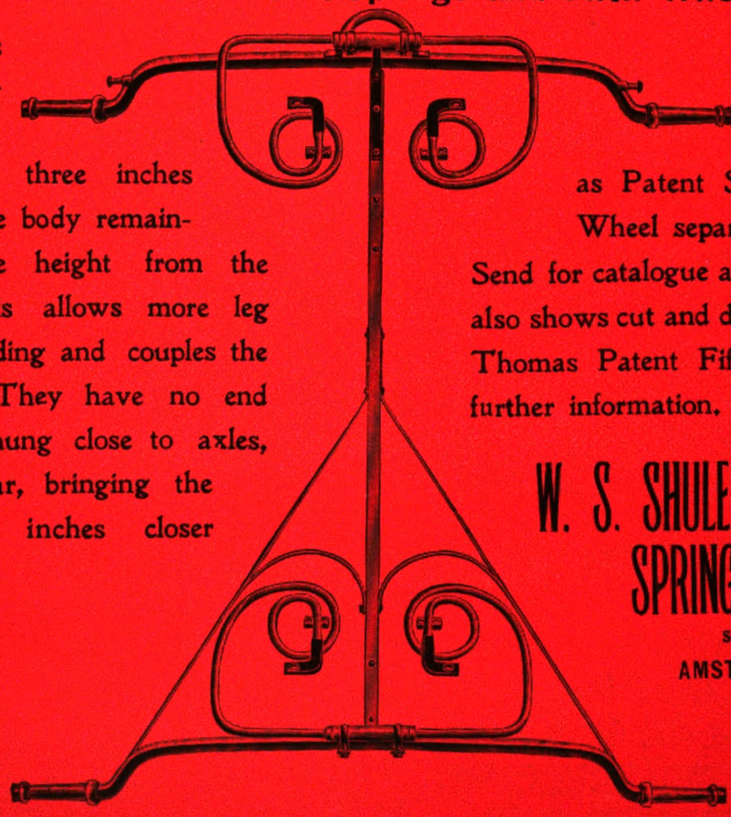
Acts as an equalizer and keeps the body level, as it turns at center in an indestructible vulcanized fibre bearing.

Gives a Soft, Easy Motion. Is Noiseless, Stylish, Elastic and Non-Breakable



THE THOMAS BIKE GEAR

With Thomas Patent Springs and Fifth Wheel.



The Thomas Patent Spring allows the front axle to have three inches higher arch, the body remaining the same height from the ground. This allows more leg room for speeding and couples the horse close. They have no end pitch. Are hung close to axles, front and rear, bringing the wheels three inches closer together.

We furnish this Gear as shown. Also the Thomas Patent Springs or Fifth Wheel separate.

Send for catalogue and prices, which also shows cut and description of the Thomas Patent Fifth Wheel, and further information.

W. S. SHULER & THOMAS SPRING CO.,

Sole Manufacturers,

AMSTERDAM, N. Y.,

U. S. A.

AMSTERDAM, N.Y.

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STAN

Batavia "Star Brand" Rubber Tires

Empire Made by Ball Bearing The Chicago Screw Co. Axles

Amesbury Pneumatic Gears

Batavia Carriage and Wagon Wheels

ANTI-FRICTION

THIS COMPANY
IS OWNED, CONTROLLED
AND OPERATED BY THE
CONCERNS WHO
MANUFACTURE THE
GOODS WE SELL.

S. A-F. E. Co.

50 BROADWAY N. Y.

FACTORIES—
CHICAGO ILL.
BATAVIA N. Y.
WILKES-BARRE PA.
AMESBURY MASS.
BARBERTON, OHIO.

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BARD EQUIPMENT CO.

Beasley Truss Elastic Construction. Tires

Drop Forged Axles, Fifth Wheels, Etc.

Cushion and Pneumatic Tires

Sheldon Axles and Springs

Mr. Carriage Manufacturer:-

Our representatives, Messrs. A. C. Farnsworth, W. W. Leavenworth, A. W. Caney and J. Spofford are out after your orders. Should they not succeed in reaching you BEFORE, you will find them at the Fall conventions--New York and Cincinnati--prepared to quote you on the best line of goods money and skill can produce at prices that should secure your business.

We will take pleasure in demonstrating to you at the conventions our latest improved method of applying Rubber Tires.

Respectfully,

S. A-F. E. Co.

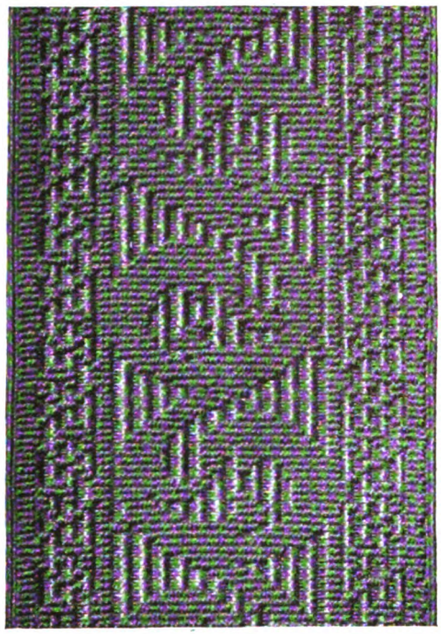
Address all communications to S.A-F.E.Co. 50 Broadway, New York.

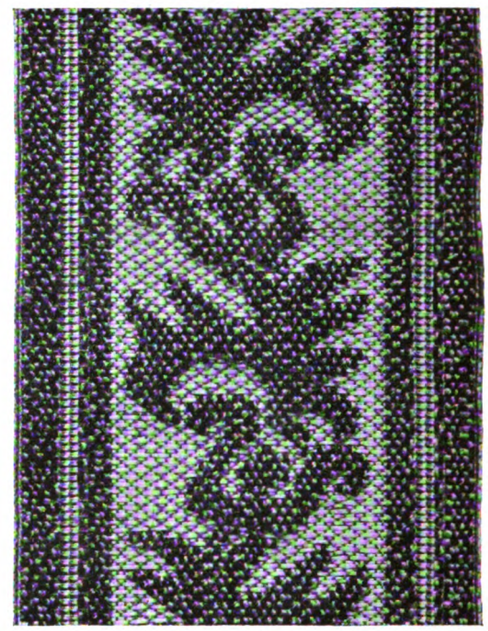
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Manufacturers of

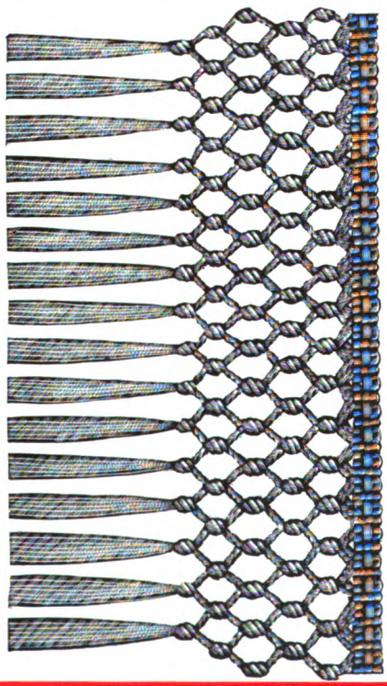
CARRIAGE CLOTHS

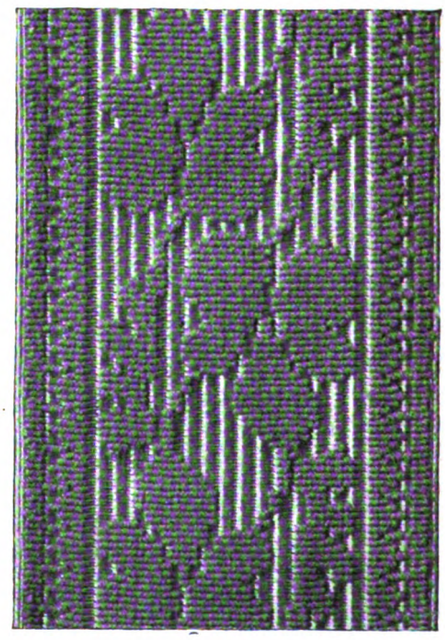
Coach Laces **Canopy Fringes**





HORSTMANN





WM. H. HORSTMANN COMPANY

PHILADELPHIA, PA.

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The Standard of Quality

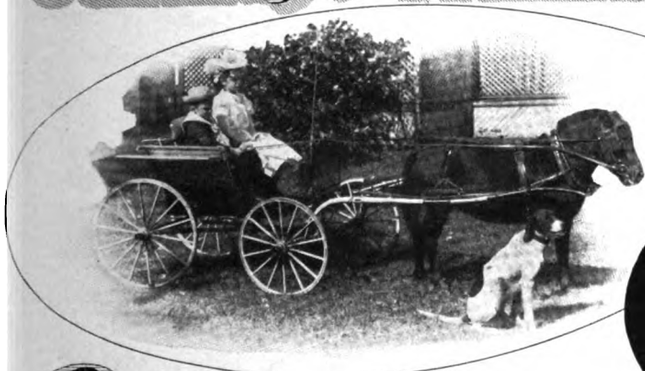
Our Body and Gear Varnishes have no Equal for Brilliancy, Durability and Easy Working qualities. ∴ ∴ ∴ ∴ ∴ ∴ ∴ ∴

WRITE US

Columbus Varnish Co.,

Columbus, Ohio.

Carriage Manufacturers & Dealers!



WHY NOT USE THE BEST Enamels!

THEY COST NO MORE AND BRING GREATER RETURNS.

Cuts COMBINING BEAUTY STRENGTH & FORCEFULNESS.

CUTS THAT STRIKE HOME

CUTS FULL OF THE SNAP AND VINEGAR THAT MAKE SALES

THE KIND OF CUTS YOU OUGHT TO USE

C. P. ZACHER & Co.

221 5TH AVE. COR. QUINCY. CHICAGO. 'PHONE MAIN 3850

WRITE FOR INFORMATIONS.

Please mention "The Hub" when you write.

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SEQUEL - TO - LAST



Dear Will:-

Yours received and I felt sure you wouldn't care because I published that letter of yours in The Hub last October.

You may not know it, but after I left you at the old shop I kept right on using those blamed varnishes that gave us so much trouble, and a big fool I was for doing it too. You and I both thought we knew a thing or two in the old days about varnish, but I guess it was because we considered backaches and armaches a part of the business. How we had to work to put that old stuff on. It fairly pulled the bristles out of the brushes.

No I will never forget the many nights I have threshed around in bed — dreaming of the probabilities of the usual sagging, curtaining, beading, or pitting of that varnish which nearly always gave me trouble one way or another, and made a man feel like 30 cents when he saw his job in the morning.

STANDARD VA
MANUFACTURERS OF HIGH
GENERAL OFFICES, 29 BROADWAY, NEW YORK.

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YEARS-VARNISH-STORY

Your letter was a Godsend to me — I took your advice and tried a little "Standard" Varnish. Was skeptical at first, so only used their Rubbing. Say! you could have knocked me down with a feather. Talk about results — I never knew what varnish was before. My men call it "armor plate". You can't rub through it.

Then I tried their Finishing. Well! I think the carriage painters ought to erect a monument to the men who make that Finishing. Its the greatest stuff I ever put on with a brush. Talk about "free working" and "free flowing"! I could put it on with a syringe and it would flow out all right. And durable, it wears like iron and looks like a polished mirror.

Now Well I am indebted to you for just 365 good night's sleep, for it is about a year ago, that I began using the "Standard" Varnishes, and I assure you that in all that time I have never had a job go back on me. Every job I turn out looks well and wears well, and there's scarcely a customer I've worked for, that hasn't recommended some friend to me sooner or later.

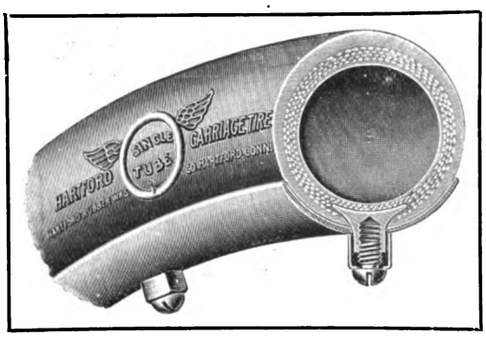
Yours — Jack.



RNISH WORKS
GRADE CARRIAGE VARNISHES
CHICAGO, 2620 ARMOUR AVE. LONDON, 23 BILLITER ST.

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The HARTFORD



SINGLE TUBE TIRE

"Honest Reputation and Recognized Quality."

Every Dealer knows that when a job is fitted with HARTFORD TIRES the maker has given him the best tire procurable in the market.

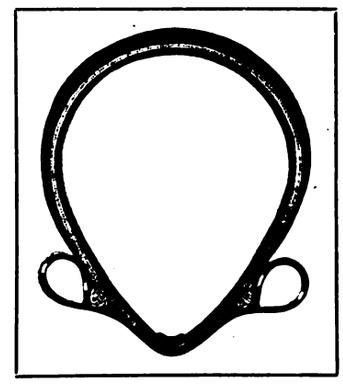
THEY DISTINGUISH THE HIGH GRADE VEHICLE

Manufacturers make no mistake in fitting them. Dealers make no mistake in ordering them. Riders make no mistake in using them.

Manufactured by **THE HARTFORD RUBBER WORKS CO.,** *Hartford, Conn*

THE MOST SUCCESSFUL TYPES OF PNEUMATIC VEHICLE TIRES

THE JUSTLY POPULAR DUNLOP DETACHABLE TIRE



Consists of two parts, the outer case and the inner tube. It can be detached from the rim instantly and put back as quickly as it was taken off. The act of inflating with the pump fastens it to the rim.

THEY GIVE HONEST ALL ROUND SATISFACTION, BECAUSE THEY ARE WONDERFULLY RESILIENT AND AT THE SAME TIME SIMPLE AND EASY TO MANAGE AND REPAIR.



These Are The Only Tools You'll Need.

Manufactured by **THE HARTFORD RUBBER WORKS CO.,** *Hartford, Conn.*

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WE SHALL FULLY UPHOLD OUR REPUTATION FOR

EXTREMELY HIGH-GRADE QUALITY

IN THE MANUFACTURE OF

The excelence of Design, and Construction recommends these tires to all who desire

Reliable and Satisfactory Service

HARTFORD SOLID CARRIAGE TIRES.







They are a great gain over all others in ease and strength as well as endurance.

THEY FULLY MEET EVERY SOLID TIRE REQUIREMENT.

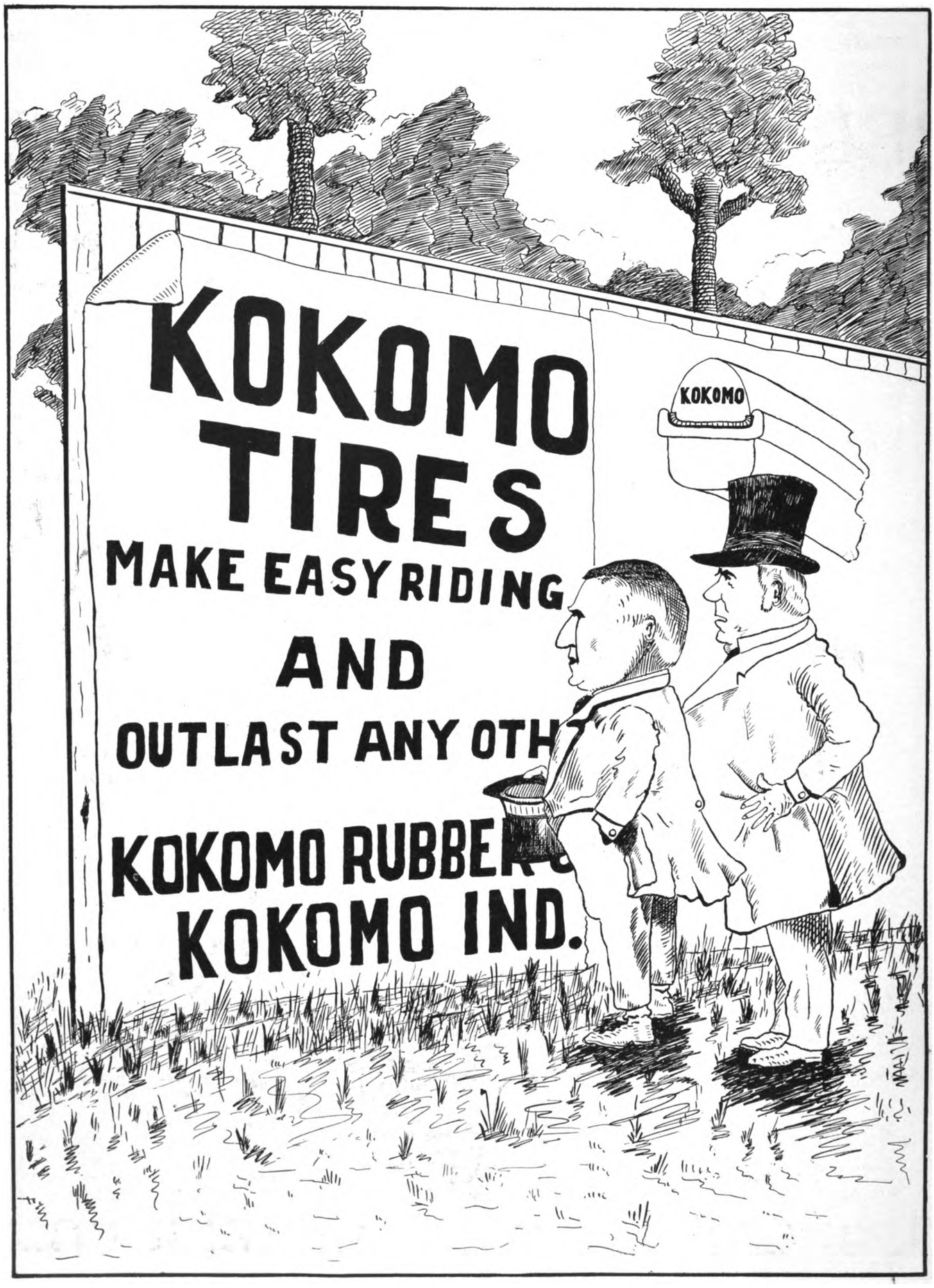
OUR TIRE MACHINES *are pre-eminently successful and are universally acknowledged to be*

GREAT TIME-SAVERS



THE HARTFORD RUBBER WORKS COMPANY, Hartford, Conn., U.S.A.

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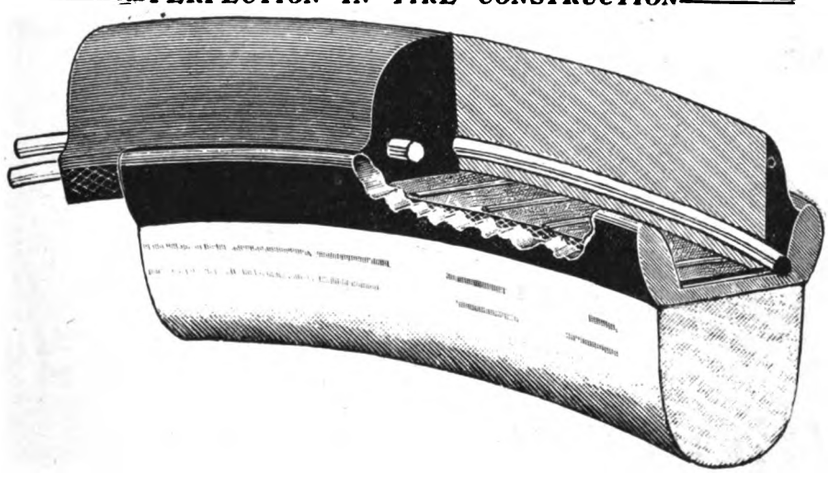
"WEMAKA"

PERFECT VEHICLE TIRE

Perfection in Tire Construction.

Wise Buyers
Buy Cross Wire Tires!

PERFECTION IN TIRE CONSTRUCTION



CROSS WIRES are to a tire what a railroad tie is to the rail---a support.

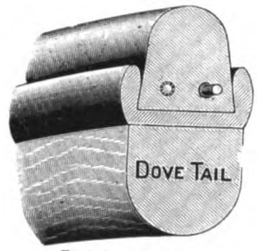
NO EXPERIMENT---one year in service has convinced the user, manufacturer, our competitors and ourselves that it is all we claim for it.

Fifty years we have been compounders and vulcanizers of Rubber, which insures the buyer that our Rubber is right, and made to withstand wear.

N. J. CAR SPRING & RUBBER CO.,

JERSEY CITY, N. J.

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Patent applied for.



As

Private Character

is the foundation of

PUBLIC VIRTUE

so are

HONEST METHODS

in the manufacture of

RUBBER TIRE

the foundation of an

ENVIABLE REPUTATION.

VICTOR TIRES

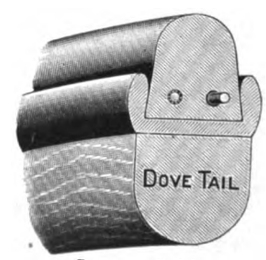
have it, and justly so.

THE VICTOR RUBBER TIRE CO.,

SPRINGFIELD, OHIO.

NEW YORK, BOSTON AND BRANCHES.





Patent applied for.

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THE LONG DISTANCE TIRE

ON TIME TO THE MINUTE

THE NEW YORK VEHICLE TIRE.



Delays, discomforts, annoyances eliminated. Long or short journeys on business or pleasure anticipated without anxiety and accomplished without mishap when equipped with

THE LONG DISTANCE TIRE

The most reliable tire on the market. No other gives such satisfying service. Constructed on a simple, sensible principle. The clock face shows a cross-section of the tire. Have your dealer or manufacturer of carriage or automobile put it on your vehicle, or write to us for it or about it.

NEW YORK BELTING & PACKING CO., Ltd.

STORES:

NEW YORK,	25 Park Place
BOSTON,	24 Summer Street
PHILADELPHIA,	724 Chestnut Street
BALTIMORE,	101 Hopkins Place
CHICAGO,	150 Lake Street
INDIANAPOLIS,	229 South Meridian Street
ST. LOUIS,	411 North Third Street
SAN FRANCISCO,	509-511 Market Street

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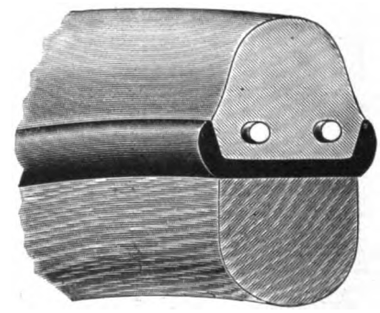
If there is anything new THE INDIA has it.

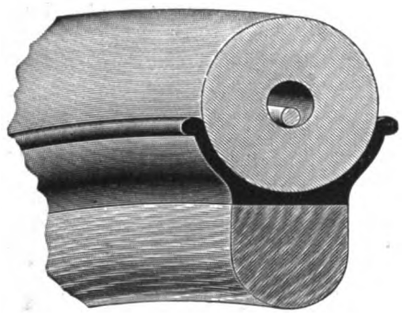
IT'S A HABIT!

The newest thing is the Wheeler Endless Carriage Tire. It can not pull off, creep or cut out and anyone can put it on. It fits the regular channel. In fact it's easy.

See it at the New York and Cincinnati exhibitions.

This tire is made of the best compound ever used for this purpose. It will wear and is resilient. You have our guarantee. We want your business. Ask us for the price. It's low, very low.





Our cushion tire is made from the same compound as the two wire tire and is stamped with our name. We can also furnish the channels.

PNEUMATICS! PNEUMATICS!

We lead the parade with India Pneumatic Tires. Get our prices.

THE INDIA RUBBER CO.

AKRON, OHIO, U. S. A.

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A GUARANTEE

is either meaningless or else it is based upon careful business record and experience. To be of value in any case it must be backed by financial responsibility.

Calumet Rubber Tires are sold with a Guarantee that guarantees.

MECHANICAL RUBBER GOODS
RUBBER HORSE SHOES,
PADS,
MATS,
MOULDED GOODS, Etc.

INCREASED PLANT
LATEST MACHINERY
GREATEST INDUCEMENTS FOR 1902
WRITE FOR PARTICULARS

TIRES

for Baby Carriages
or 30,000 lb. Trucks.

Calumet Tire Rubber Co.

Factories, CHICAGO, ILL.

New York, Boston, Philadelphia, Buffalo, Washington, Cincinnati

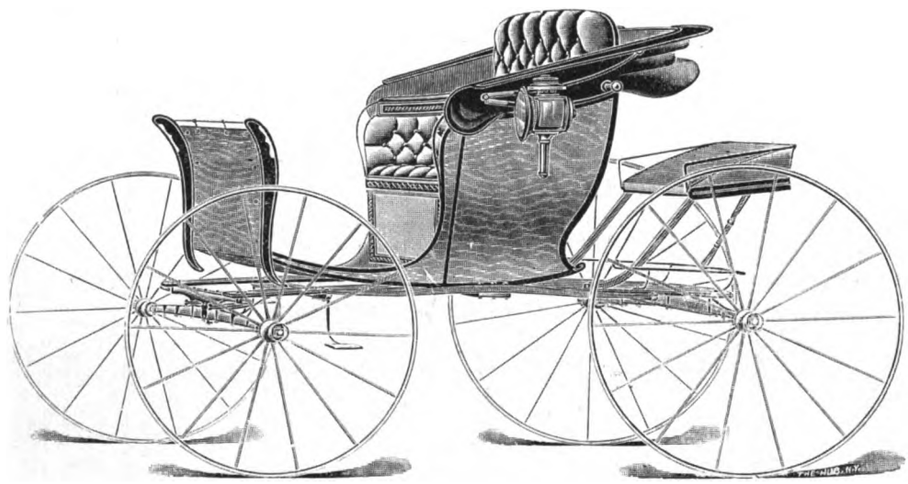
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THE SUPERIORITY IN DESIGN,

CONSTRUCTION, FINISH AND EQUIPMENT OF OUR FOUR HUNDRED SERIES BUCKBOARDS HAVE MADE THEM THE STANDARD OF COMPARISON FOR OTHER BUILDERS OF VEHICLES IN THE BUCKBOARD LINE.

THE STATEMENT, "AS GOOD AS A WATERLOO," MEANS TO THOSE WHO ARE "VEHICLE WISE," THAT HIGHER PRAISE IS IMPOSSIBLE.



"Waterloo," No. 437, Colonial Spyder Curricle.

THE CARRIAGE DEALER WHO IS CATERING TO HIGH-CLASS TRADE WILL FIND THIS LINE A DESIRABLE ADDITION TO HIS STOCK, NOT ONLY IN THE CHARACTER IT WILL GIVE, BUT IN THE PROFITS IT WILL MAKE HIM.

CATALOGUE AND PRICE LIST MAILED TO DEALERS, IN TERRITORY NOT ALREADY ASSIGNED, ON REQUEST.

EARLY APPLICATION IS ADVISED.

THIS LINE OF BUCKBOARDS IS MEETING WITH MUCH FAVOR IN MANY OF THE PAN-AMERICAN COUNTRIES, AND WE QUOTE ATTRACTIVE PRICES, CAREFULLY BOXED, ON BOARD VESSEL AT ALL EXPORT POINTS.

WATERLOO WAGON COMPANY, Ltd

WATERLOO, SENECA CO., N. Y.,
U. S. A.

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WAGON

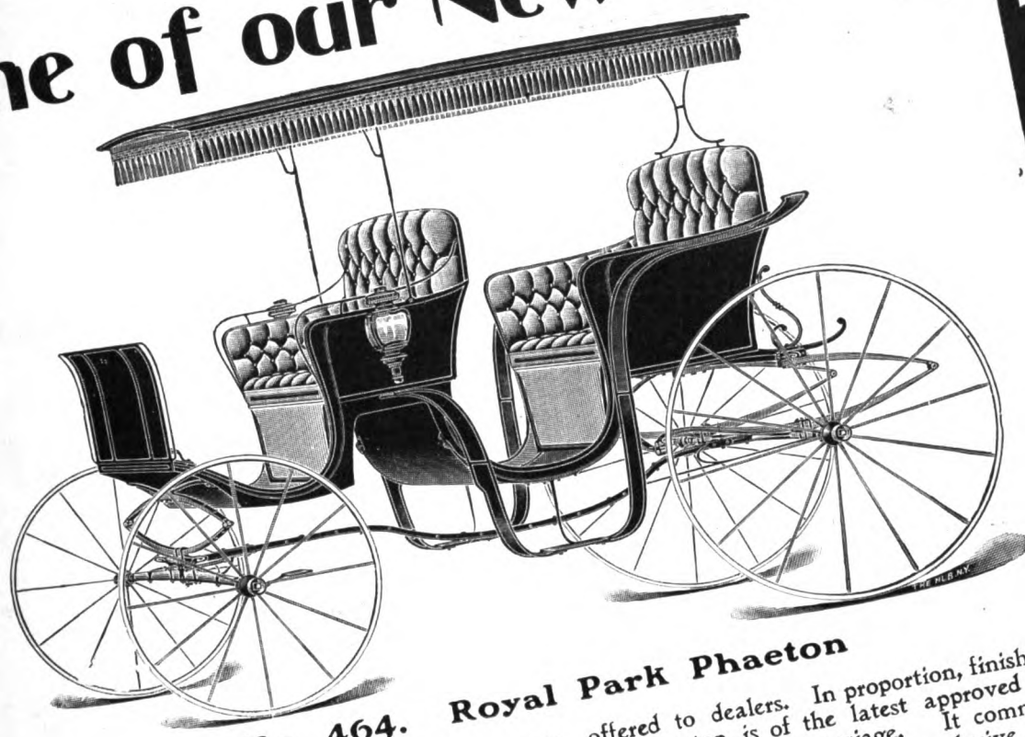
WATERLOO

COMPANY LTD.,

LATE STYLES

FINE FINISH

One of our New Styles



No. 464. Royal Park Phaeton

We show above one of the best values ever offered to dealers. In proportion, finish and equipment it is absolutely correct in every detail. The top is of the latest approved construction and is easily removable, making a very handsome open carriage. It commands the immediate and favorable attention of the buyer who is looking for an exclusive high-grade vehicle at the right price. *Vehicle Dealers in the Pan-American countries will receive our Special Export Price Sheet free by mentioning "The Hub" when they write.*

Unusual care is given to boxing for ocean shipment to economize space and secure safe arrival.
Prices are quoted on board vessel at export points in our price sheet.

NEW CATALOGUE AND REVISED PRICE LIST FREE

SENECA CO.

WATERLOO

N.Y.

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Announcement

The KEYSTONE CARRIAGE Co.

Of CINCINNATI, OHIO

Cordially invites the dealer to look over their new entries of "THOROUGHBRED" Vehicles at

The New York Exposition

OCTOBER 14th to 19th

and at

The Cincinnati Exposition

NOVEMBER 18th to 23d



UR most popular designs of last season will be continued this season, to which have been added several new designs.

We solicit your careful investigation in quality and prices. We feel confident your interest will mean your patronage.

"BACK THE WINNER"

The KEYSTONE CARRIAGE Co.

Manufacturers of "Thoroughbreds"

CINCINNATI, OHIO

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Amesbury Department.

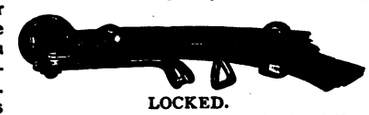
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BAILEY'S SHAFT SHACKLE IS CALLED THE BULL-DOG

A SHAFT shackle is the connecting link between a carriage and its motive power. Up to the time the "Bull-Dog" was invented shaft shackles were imperfectly made, noisy, clumsy in appearance, constructively weak and unsafe. To embody all the qualities necessary to a perfect shaft shackle, it should be safe, silent, simple, strong, neat, quick-shifting, interchangeable. The Bull-Dog shaft and pole shackle embodies every feature necessary to a perfect mechanical device. Shaft shackles must have rubber around the bolt of sufficient size to absorb the constant vibration caused by contact of the wheels with uneven roads and pavements. This cushion feature has stood the test of years, and become a fixed fact. Those that are good are good because they are cushioned around the bolt with rubber. The Bull-Dog is the best because it has more rubber around the bolt and is a quick shifter. The shackle eye is a trifle narrower than the ears, and the inside diameter is smaller in the middle, thus gripping the rubber harder at that point and pressing it firmly toward the ends. All contact or rattle from sidewise throw of the shaft is thus prevented. Result: absolute silence, little or no wear. The Bull-Dog shackle is absolutely safe. Closing the lever locks it in a little notch, and there it stays until you open it. The end of the lever is turned up and a loop made in it, so that if a connecting strap between the shaft and axle is used—as is usual—it may be passed through the loop in the lever handle, and then through the check loop on the shaft; they are close together. If this is done, the lever cannot be unlocked by any possible means until the strap is removed. It is impossible for the Bull-Dog shackle to come open until you want it to. With the Bull-Dog shackle the draft comes on the main part of the iron, which is welded on and made a part of the shaft iron. The load is pulled by an integral piece of metal. On the Bull-Dog shackle the check loops are made of forged steel. The edges of shackle and parts of the jam where they come together are "rounded," so they cannot pinch and "bite" the rubber. The construction of the Bull-Dog shackle in every part insures the utmost strength, durability, and safety. The Bull-Dog shackle can be applied to any shaft or pole without changing the shackle part on the carriage. The rubber spool is large enough to admit a full-size bolt and still give plenty of rubber for a cushion. The Bull-Dog shaft-eye will fit any bolt in use. The Bull-Dog shackle combines all possible good features; the jaws open, as shown in the illustration, without the use of any tool. The movement is as simple as buttoning a door, and very similar to the action of the common lever-lock on a butcher's refrigerator door. The lever works either way; may be operated with either hand, and when turned so that the shackle can be opened forms a handle to open it by. Then with the shafts on the ground they may be lifted out readily. Nothing can be quicker or simpler. A letter from a man who uses the Bull-Dog shackle says: "I can take out my shafts and put in my pole while the stable boy is going for a wrench to take off the nuts of the old shackle." He names thirty seconds, but thinks it can be done in less time. That's quick, but the record is quicker than that. The simplicity of the Bull-Dog shackle is so apparent that it hardly needs comment. It has no complications nor intricacies, nothing to slip or get out of order or to puzzle over. A child can operate it effectively and safely. It is accident-proof, "fool-proof," and stays locked till you open it. In appearance it is neat and trim. At a casual glance it would not be distinguished from an ordinary shaft-eye. The pole-eye is equally neat and effective. Merit always meets with appreciation. The merits of the Bull-Dog shackle and its superiority over any other device on the market are obvious and indisputable. The minute a purchaser understands the difference between the Bull-Dog and any one of the numerous other shackles, just that minute he will insist on a Bull-Dog shackle, because it insures the comfort, convenience, and safety of himself and family. Every carriage dealer or manufacturer will at once recognize the importance of it as an inducement to his customers. The cost of the Bull-Dog shackle is very little more than that of a common shackle. It can be put on a carriage without materially increasing its cost, but will add substantially to its selling value.



OPEN.



LOCKED.

The Bull-Dog shaft shackle was originally intended for use exclusively on the Bailey Whalebone Road Wagon; but, finding there was a large market for it as a specialty, it is now used in all classes of carriages.

S. R. BAILEY & CO.,

Amesbury, Mass., U. S. A.

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Bailey's
Pneumatic
Whalebone Road Wagons

are extremely Refined in appearance and excellent in workmanship.
They reflect great credit on the maker and selling agent.

S. R. BAILEY & CO.
Amesbury, Massachusetts, U. S. A.

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DEALERS

L-O-O-K

For the New Cut Under Patented

HIGH POINT WAGON

at the

New York Exposition

October 14 - 19

BRIGGS CARRIAGE Co.

MAKERS

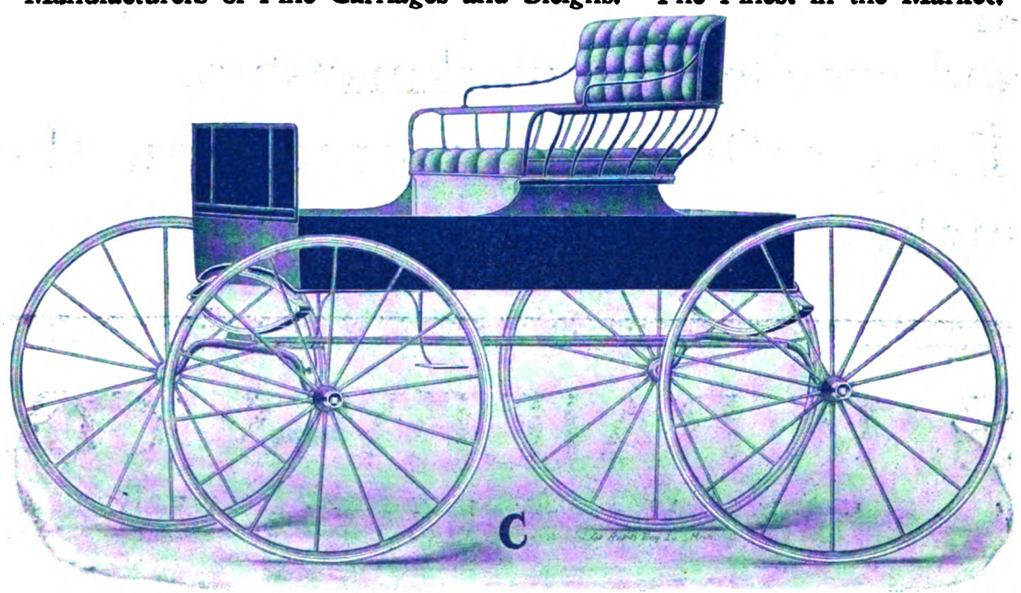
AMESBURY, MASS.

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CONNOR CARRIAGE COMPANY,

AMESBURY, MASS.

Manufacturers of Fine Carriages and Sleighs. The Finest in the Market.

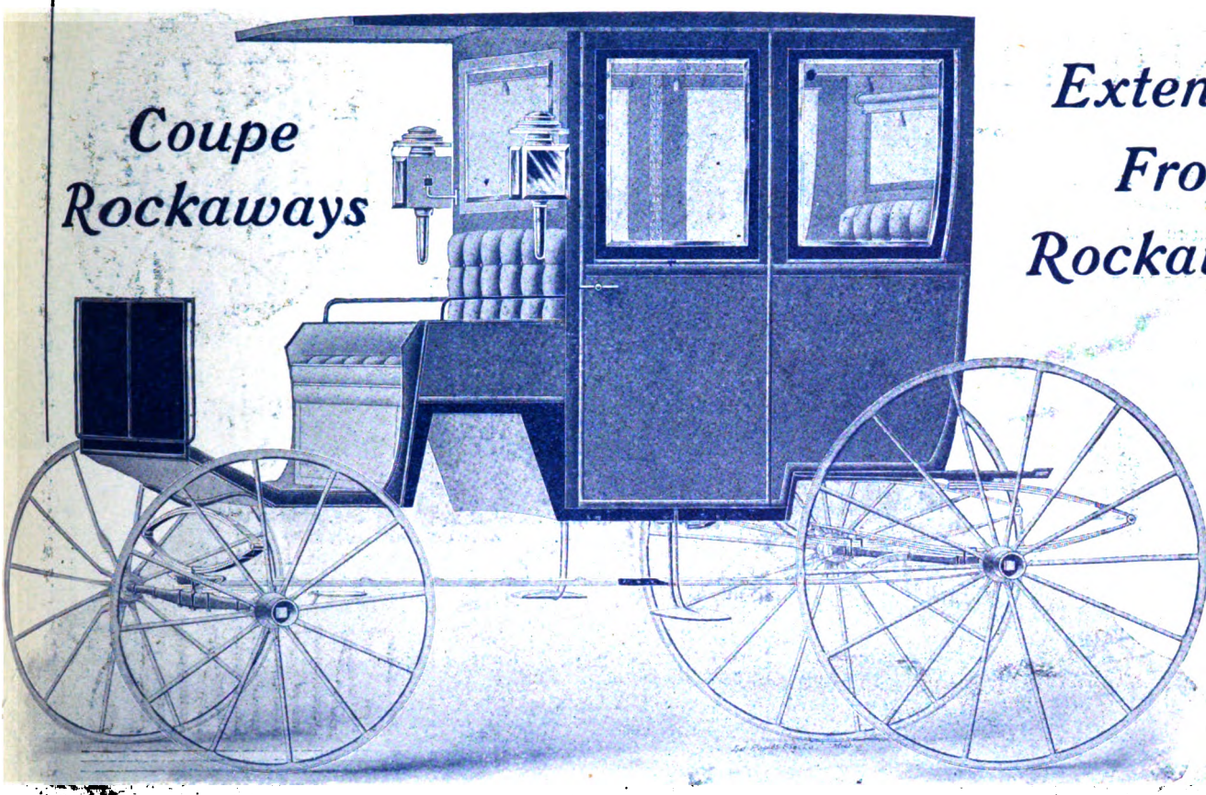


EMPIRE RUNABOUT.

We make a specialty of our Celebrated Empire Runabout, made with Marston's patent wood spoke wheels, with either solid, cushion or pneumatic rubber tires; also the Chicago Screw Co.'s Ball-Bearing axles, and Osgood rifle box.

Write for Catalogue and Prices.

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Coupe Rockaways

Extension Front Rockaways.

Depot Wagons in Glass and Curtain Quarters

Burbank Carriage Company,

AMESBURY, MASS.

Builders of High Class **Station Wagons** *and* **Rockaways**



See our Exhibit at N. Y. Exposition

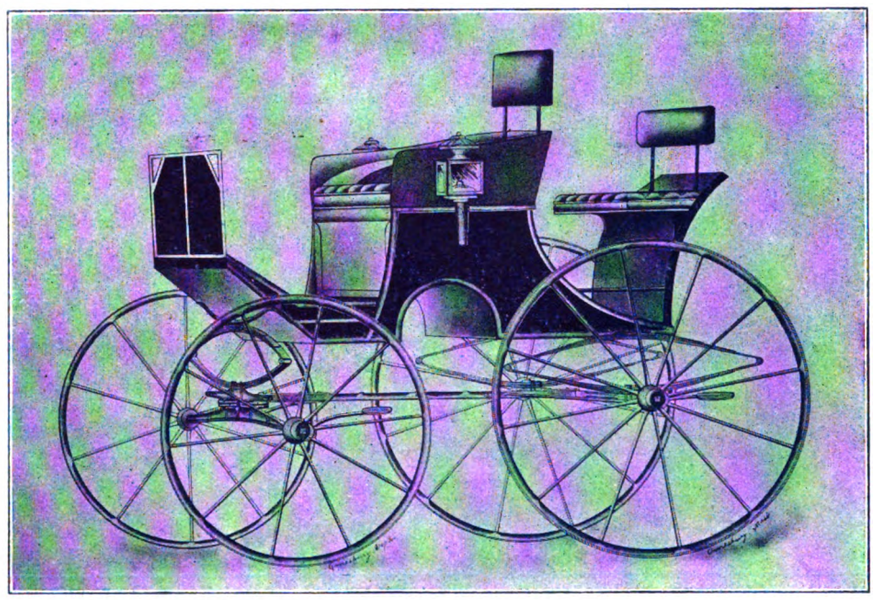
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THE SHIELDS CARRIAGE Co.

Successors to J. H. SHIELDS & CO.

We also make a specialty of Automobile Bodies, in the white, trimmed and painted.

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Designers and Builders of Fine

CARRIAGES

Established 1848.

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Chas. Wing Co.

Wholesale Dealers in

Carriage Hardware and Trimmings. . .

Correspondence Solicited.

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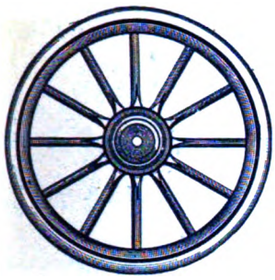
Chicago
Des Moines
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Omaha

All Coupon Ticket Agents sell tickets via Chicago, Milwaukee & St. Paul Ry.

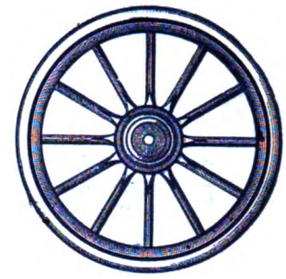
F. A. MILLER, General Passenger Agent, CHICAGO, ILL.

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High Grade Wheels

Of every discription

WHEELS OF ALL KINDS FOR DOMESTIC AND EXPORT TRADE

Goodyear Wing Solid Tires



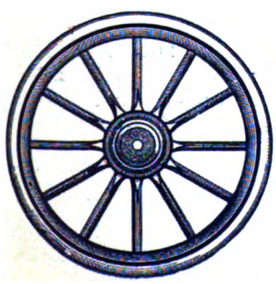
Goodyear Pneumatic and Cushion Tires

We want your business, write us for price list

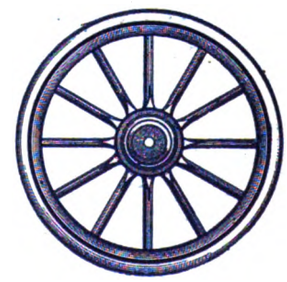
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SUCCESSORS TO ...
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Folger & Drummond

THE ... AMESBURY, MASS.

GLOSTER BRAKE

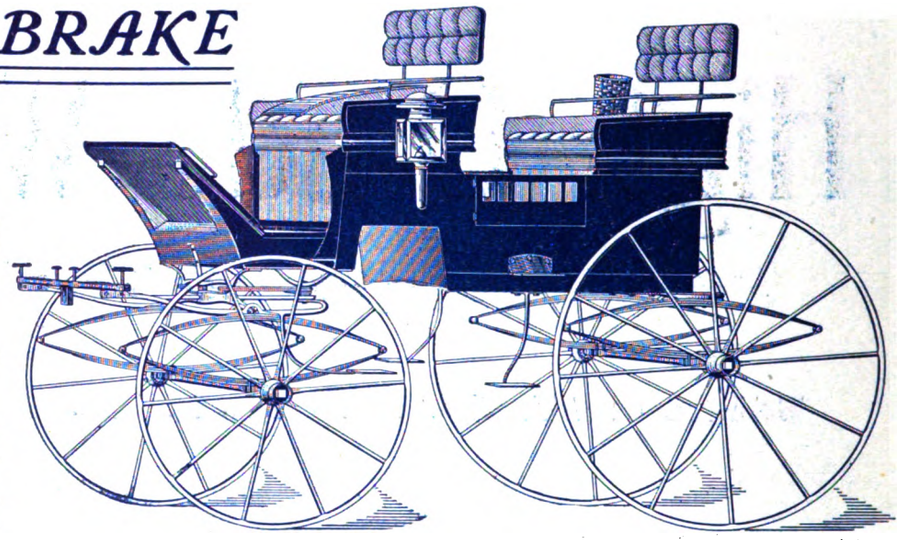
will be shown with other patterns at ...

N. Y. CONVENTION

OCTOBER 14 to 19

All dealers are invited to inspect our work.

Please note carefully the finish, quality and workmanship of our trimmings, up to date style and accurate proportions.



No. 236 GLOSTER BRAKE

Patent Enamel and Fancy Colored

FOX, FEUERHERM & MENTZ,

MANUFACTURERS OF

LEATHER.

Telephone: 79-4 Long Distance.

Special Machine Buffs in Enamel and Trimming Leather.

24 Carriage Avenue, AMESBURY, MASS.

Don't you mind if others say
That advertising doesn't pay.
Such people surely—there's the rub—
Have never patronized THE HUB.

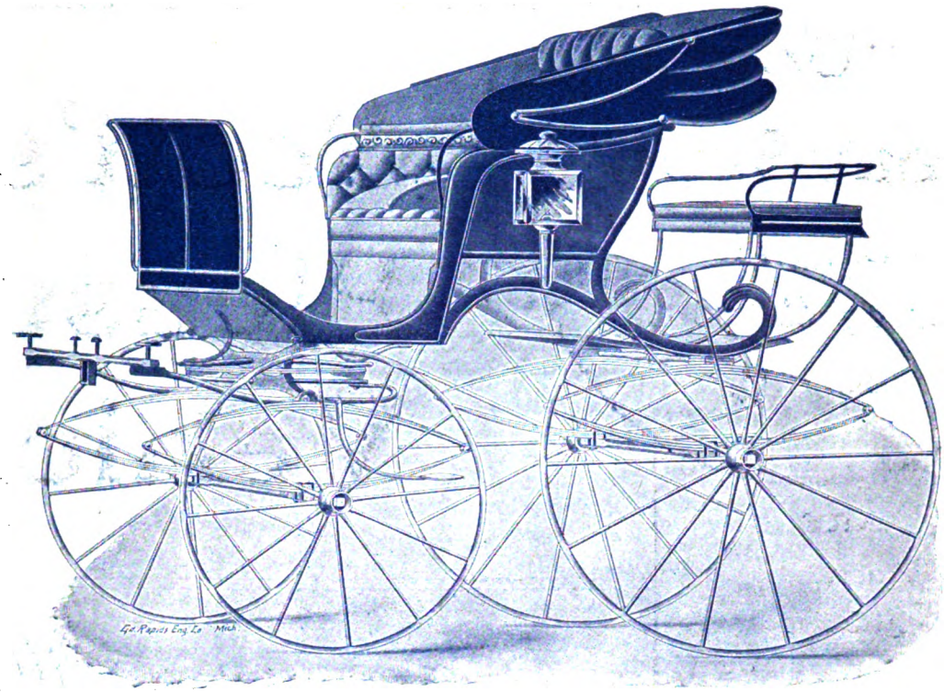
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No. 126 A.

Platform Spider, with rumble seat. This cut shows one of our popular styles. We have many others that will interest builders of high-grade work.

Catalogue on Application



MILLER BROS.

BUILDERS OF HIGH-GRADE CARRIAGES IN THE WHITE,

AMESBURY, MASS.

ARE YOU WITH REX... BUGGY CO.

Up to Date *Always Busy*

US?

Connersville, Ind.

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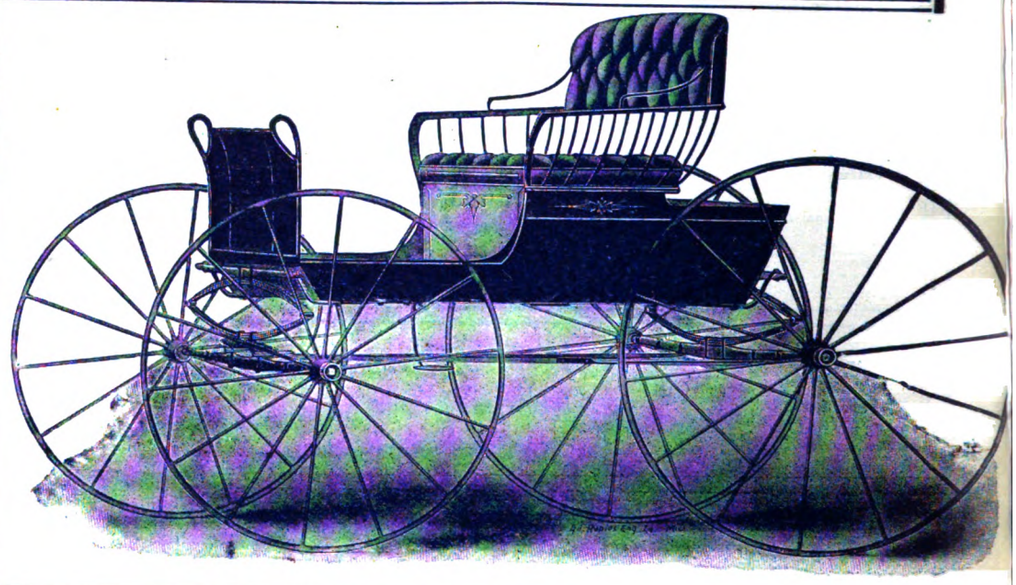
"The Great Scott"

Buggies,
Spring Wagons,
Surri[illegible]

ARE

The Finest
The Quickest Sellers
The Best Trimmed
The Greatest Money Makers
The Line for You to Sell

Scott's : : Pleasure Vehicles



Do not buy a job until you see our styles and get our prices. We can save you money, and lots of it.

R. D. Scott & Co.

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HOOVER

LIGHT

We Challenge the World!

Or any one to disprove any of the following assertions:

First, that our advancement, since beginning two years ago, in the perfection of the quality of our work, the enlargement of our line of work, and the increase in the volume of business done over that of our well-established predecessors, is greater than that of any concern of a similar kind in the world.

Second, that our work is as even in quality, or more so, than that of any factory in the world.

Third, that it is as light, neat, strong and as well finished as any.

Fourth, that our line is as comprehensive as any, when the special work which we do is considered.

Fifth, that our prices are as low, for the value which we give, as that of any manufacturer of wagons who is making any money for his trouble.

We are willing to provide any means in our power to enable anyone so desiring to either prove or disprove the above assertions.

CONCLUSION.

If these assertions are true, it will be to your advantage to deal with us. We believe that they are true. We invite you to investigate.

We believe that character and intellect are as essential in a factory as any other necessary material. If you will investigate our work before buying your next season's stock, you may find later in the season that the time spent in doing so has been well spent.

Respectfully,

HOOVER WAGON CO.

YORK, PA.

HEAVY

WAGONS

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AXLES

Cleveland Axle Mfg. Co.

CANTON, OHIO, U. S. A.

Well Made

Good Material

SPRINGS

....The Cleveland-Canton Spring Co.

CANTON, OHIO, U. S. A.

Hand Fitted

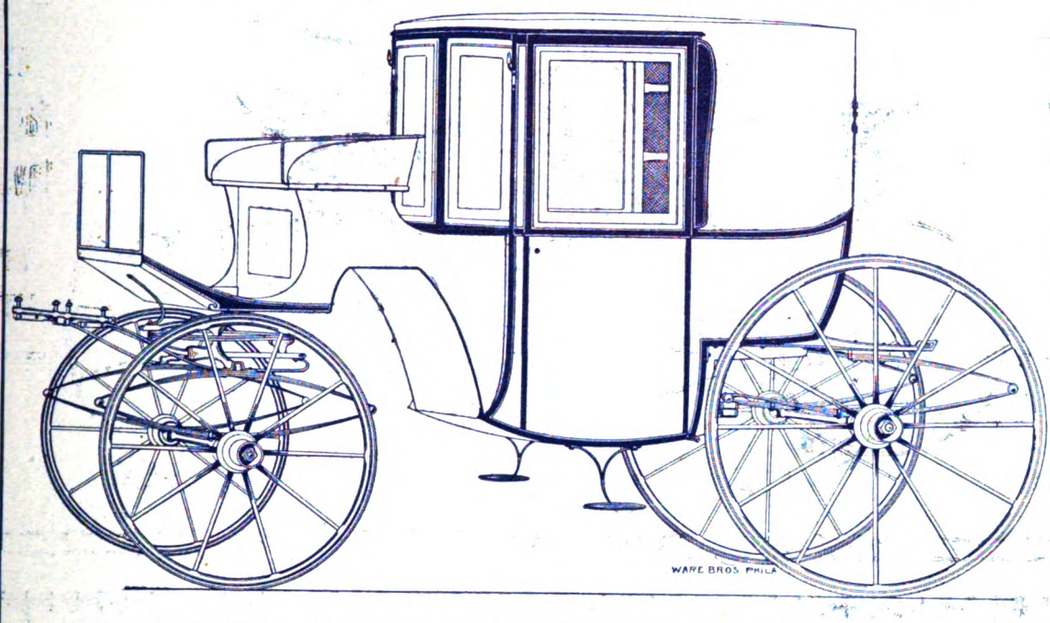
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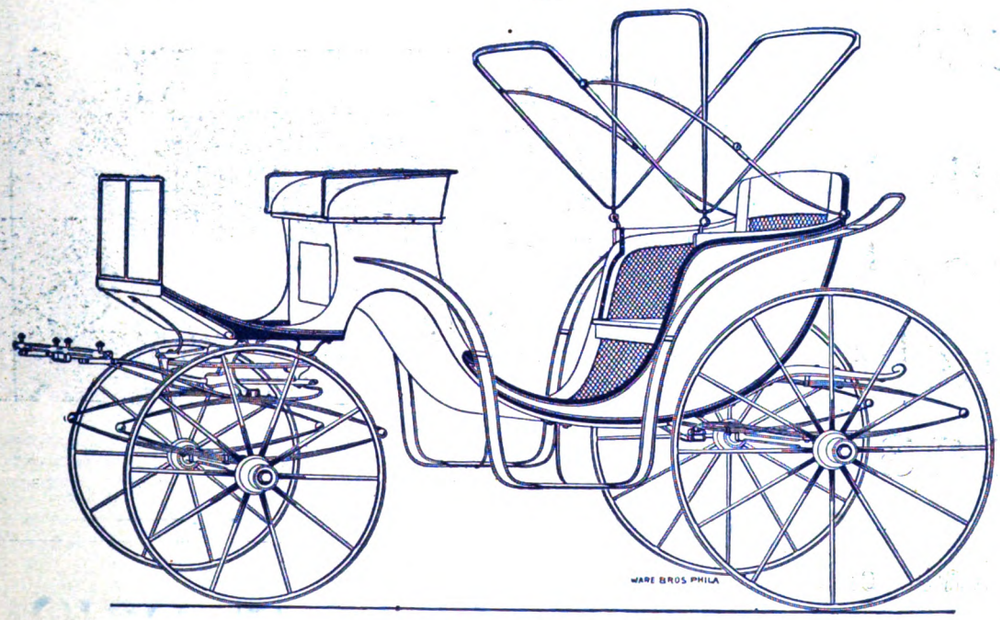
CARRIAGE AND AUTOMOBILE

BODIES

"Horton" Grade STANDS FOR Highest Grade



UP-TO-DATE CARRIAGES IRONED IN THE WHITE.



BODIES

I have moved to 127-131 Park Street.

H. A. HORTON, NEW HAVEN, CONN.

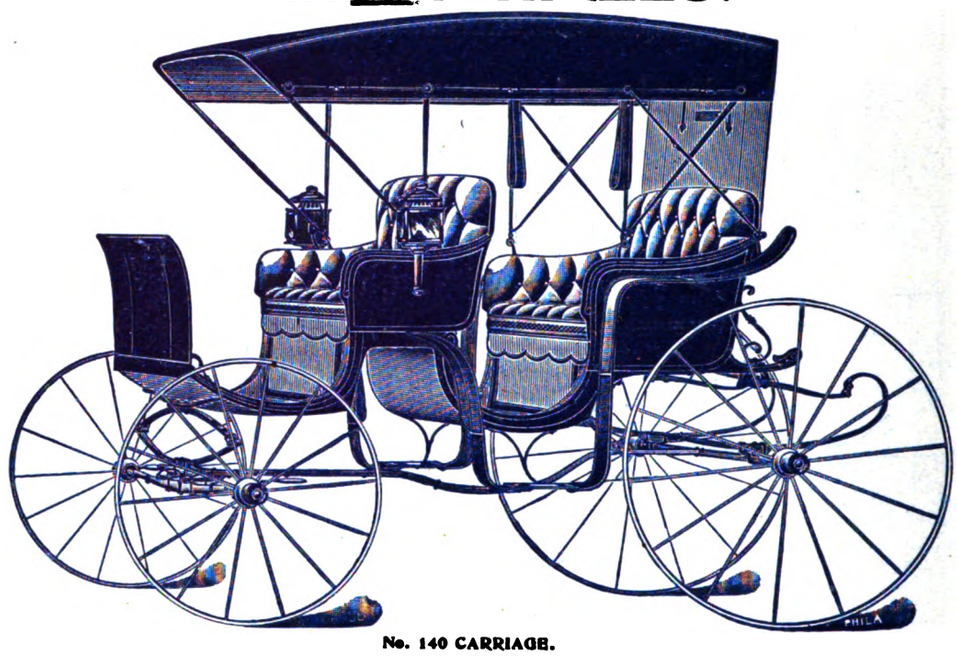
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BLEES-McVICKER CARRIAGE CO.,

Manufacturers of FINE VEHICLES.

STYLE, QUALITY, WORKMANSHIP.



No. 140 CARRIAGE.

It Will Pay You to Investigate

WRITE FOR CATALOGUE.

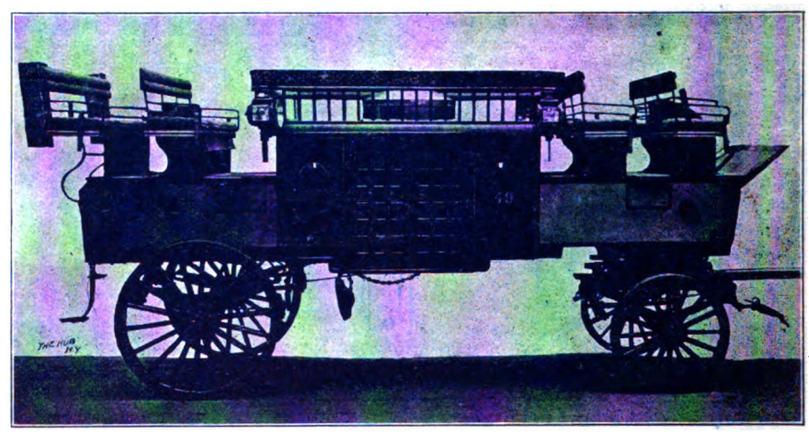
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WE BUILD

Tally Hos
Breaks
Trucks
Vans

And all kinds of...

HEAVY HIGH-CLASS WORK...



FIFTY-PASSENGER BREAK, BUILT FOR E. F. HIGGINS, ROCHESTER, N. Y. LENGTH OF BODY, 22 FT. 6 IN.; WIDTH OF BODY ON TOP, 5 FT. DRESS CIRCLE IN CENTRE SEATS TWENTY-SIX PEOPLE. ROLLER BEARING AXLES AND ARCHIBALD WHEELS. ONE MAN CAN STABLE, OR RUN THIS JOB OUT, ALONE.

CALEY & NASH

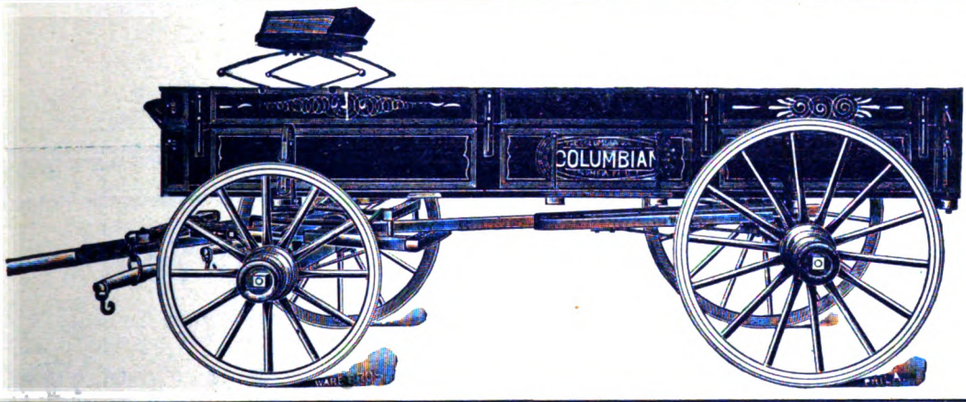
BRIGHTON, N. Y.

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MEET us at the New York Exposition, October 14-19, 1901, and see that the line of Farm and Road Wagons you contract for next season have the following trade mark on them. By this mark they are known.

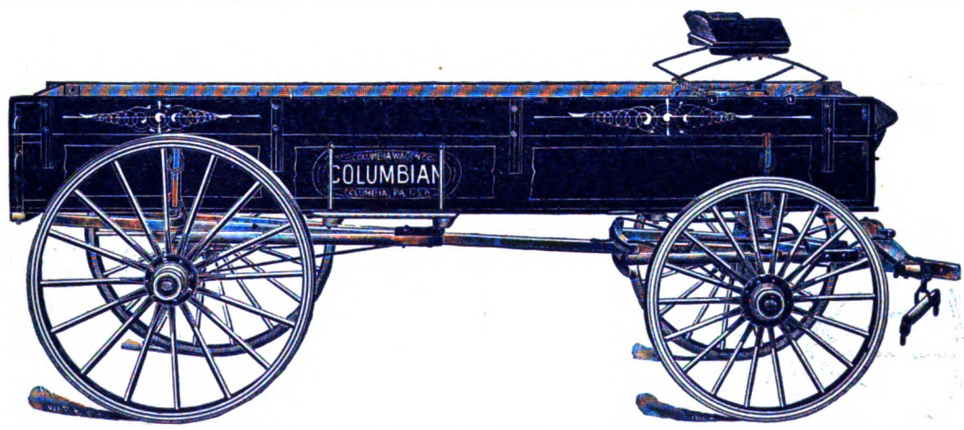
TRADE MARK

THE COLUMBIA WAGON CO.
COLUMBIAN
COLUMBIA, PA. U.S.A.



Our Cast Skein Columbian

Our Tubular Steel Axle and Sarven Wheel Columbian



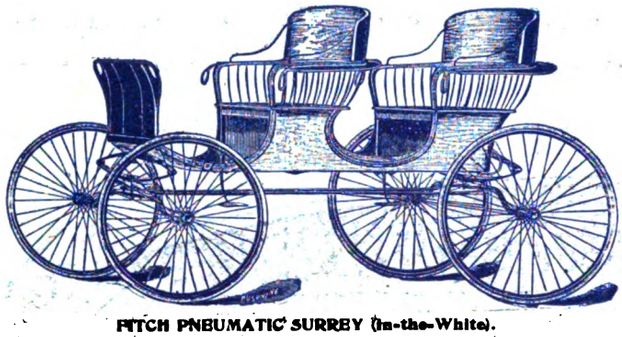
We will have the largest display of Farm and Road Wagons ever shown at the New York Exposition. Our handsome new catalogue will be ready for distribution at that time. Do not fail to see our exhibit.

COLUMBIA WAGON COMPANY

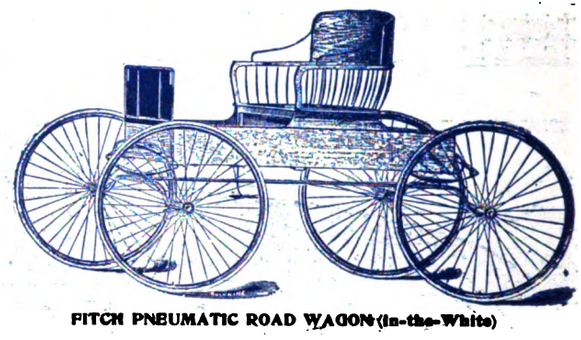
COLUMBIA, PENN., U. S. A.

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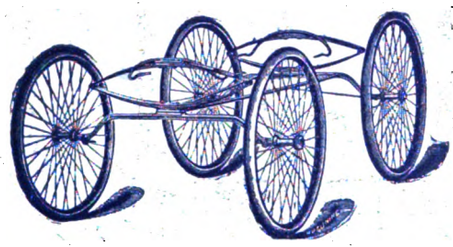
FITCH GEARS



FITCH PNEUMATIC SURREY (In-the-White).



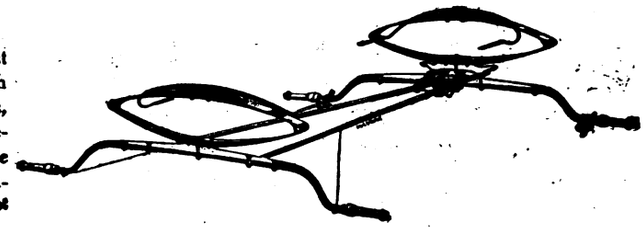
FITCH PNEUMATIC ROAD WAGON (In-the-White)



FITCH PNEUMATIC ROAD WAGON GEAR.

PRICES TO SUIT THE TIMES.

Send for our latest catalogue, with full line of gears, wagons in-the-white and carriage specialties illustrated.



FITCH IMPROVED BIKE AND PNEUMATIC GEAR.

We make Bike Gears and Wagons in-the-White, with Wood Hub Wheels and Solid Rubber Tires.

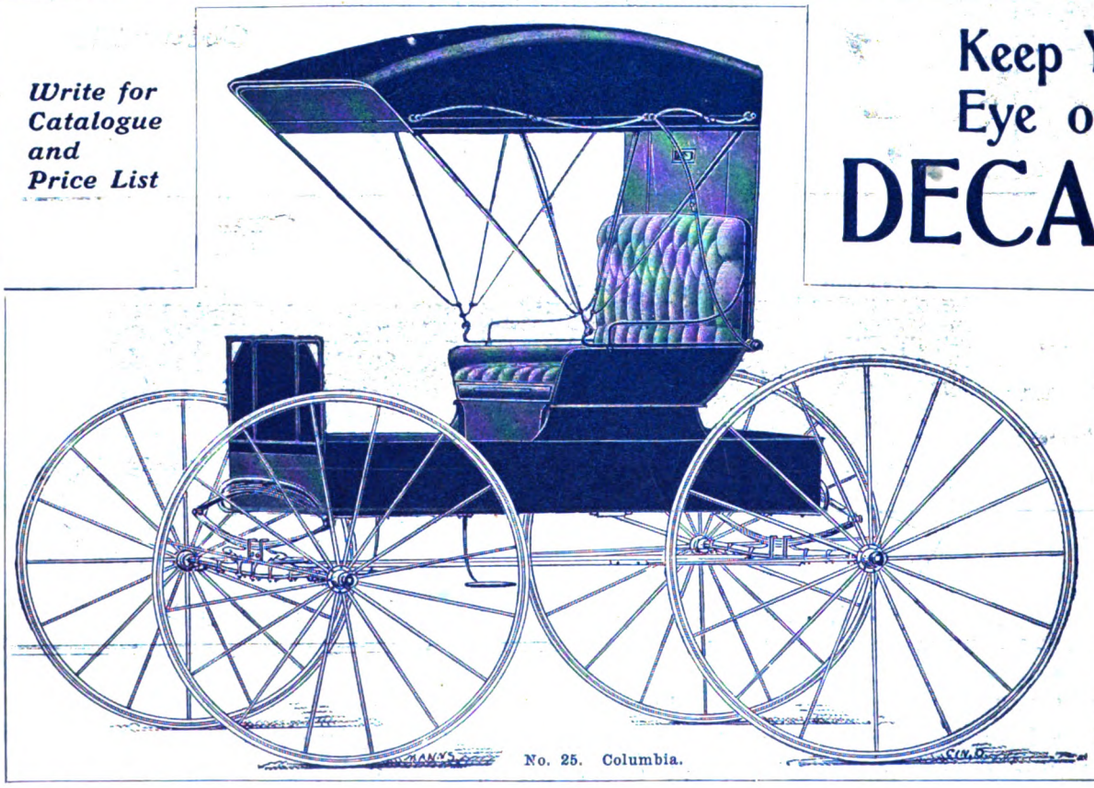
SHOWING ALL STYLES OF PNEUMATIC AND BIKE WORK.

FITCH GEAR CO., Rome, N. Y.

Write for Catalogue and Price List

Keep Your Eye on ..

DECATUR



No. 25. Columbia.

See us at Cincinnati in November

DECATUR BUGGY CO.

MIDDLETOWN, OHIO.

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THE LEADERS



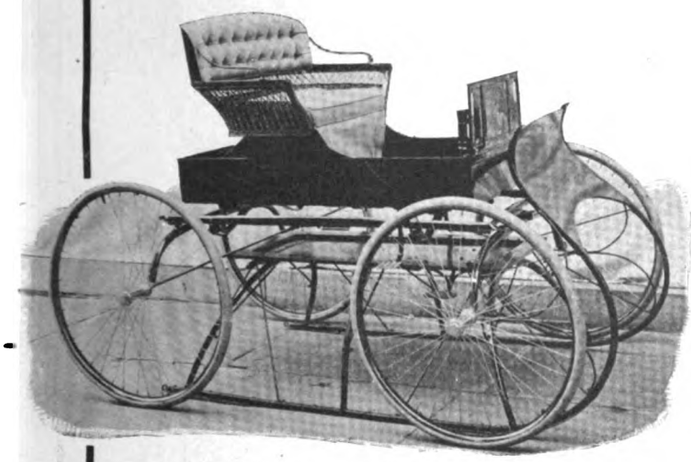
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THE EUREKA

Combination Wagon and Sleigh



4 RIGS IN ONE

One Man Speedway Wagon

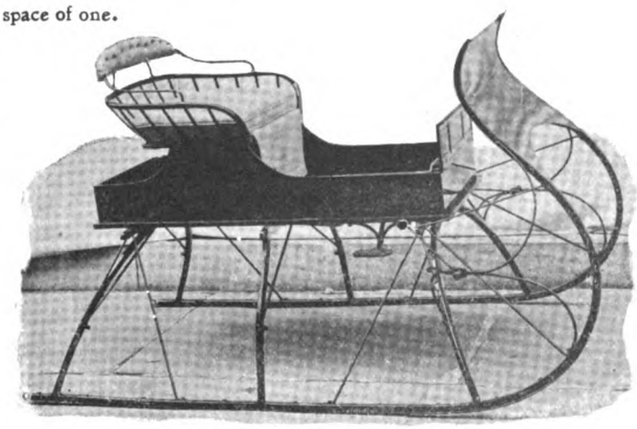
Two Man Speedway Wagon

One Man Speedway Sleigh

Two Man Speedway Sleigh

Four Rigs occupying floor space of one.

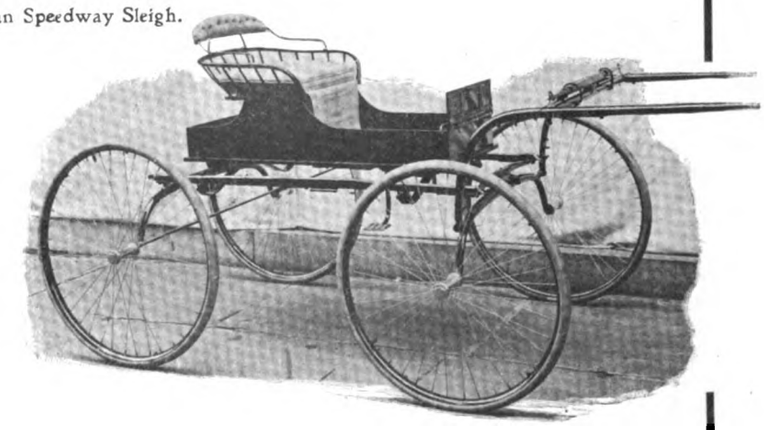
THE two man body telescopes over an 18-inch one man body, and is locked to a specially constructed platform, which is securely bolted to each wagon or sleigh gear. Each of the two bodies is separately transferable to both gears, and less than two minutes time is required to make the transfer, and the entire change is made without the use of any tool.



Two Man Speedway Sleigh.

THE patent shifting device is also equally adapted to changing automobile bodies so as to arrange for a combination delivery and pleasure carriage on the same running gear.

THE symmetrical and neatly balanced proportions of a complete rig is maintained in each of the outfits, so quickly transformable from one to another; the closest scrutiny is required to discover evidence of any relation to a combination when viewing either of the vehicles separately, especially when in use.



Two Man Speedway Wagon.

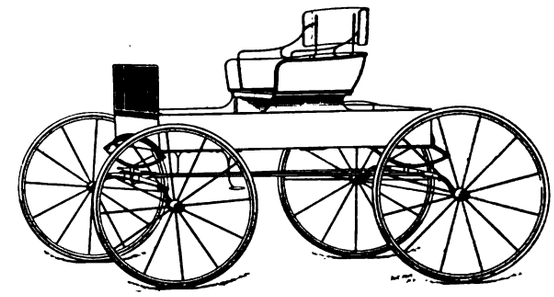
J. T. BURDICK, Friendship, N. Y.

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SCHUBERT'S WAGONS

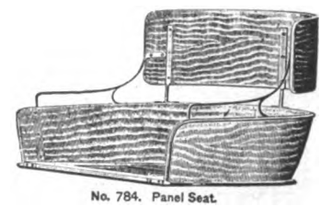
IN-THE-WHITE.

High Quality. Right Price.



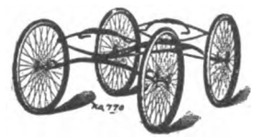


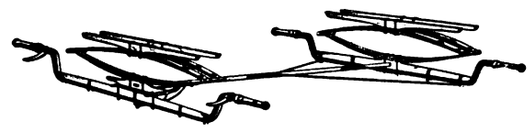


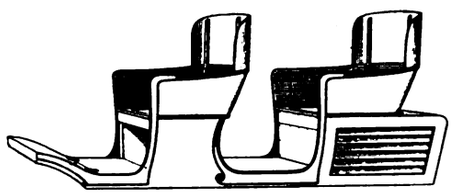


No. 784. Panel Seat.



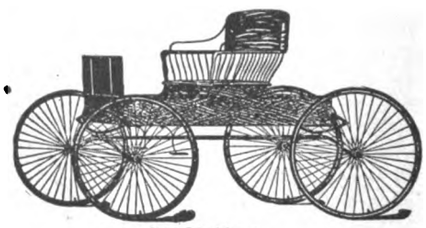




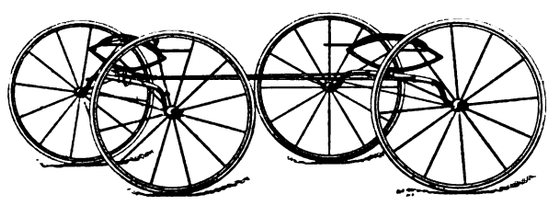


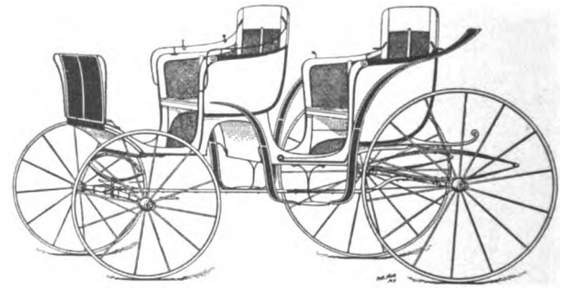
Very Latest Styles.

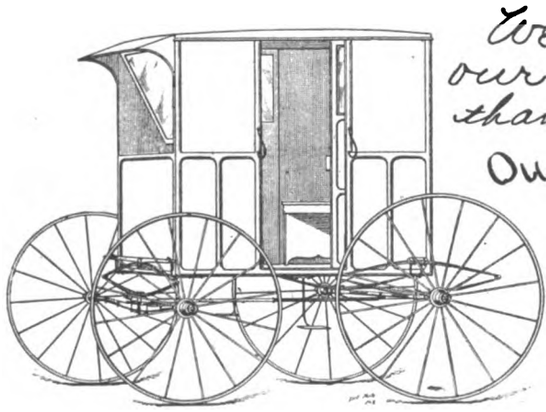




No. 700. Bike Wagon.







We have arranged to fill our orders more promptly than ever before.

Our New Catalogue is now ready.

Don't fail to see Our Exhibit at the C. B. N. A.

SCHUBERT BROS. GEAR CO.,

Oneida, N Y., U. S. A.

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More than 25,000 in use.
NOT ONE COMPLAINT.

This is a **PRACTICAL** *Fifth Wheel.*

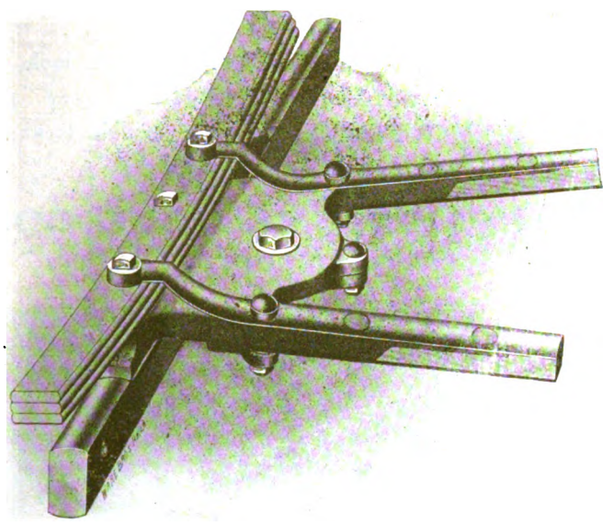
It is the only one on the market that is absolutely correct.

It is the only one adapted to bare axle construction.

If you have had trouble with other Fifth Wheels on bike wagons (and who hasn't had more or less trouble?) we ask you to try this one.

There is no troublesome brace for the wheel to strike against in turning.

It is not fragile or light in any of its part.



(Patented Dec mber 29th, 1896.)

At the same time it is not at all cumbersome. The illustration shows its neatness. No other Fifth Wheel has a lighter or more attractive appearance.

Although this wheel has been upon the market for less than two years there are more than **25,000** *of them in use and not one complaint has been made.*

WE USE THIS FIFTH WHEEL ON EVERY JOB WITH BARE AXLE CONSTRUCTION THAT WE BUILD.

Bear in mind that the value of a vehicle of bare axle construction depends largely upon the merit of the Fifth Wheel.

Upon the keystone of the arch depends the solidity of the structure. The Fifth Wheel of bare axle construction is synonymous with the keystone of the arch.

Make sure that the "keystone" of your vehicle is correct.

OUR WORK MAY BE SEEN AT

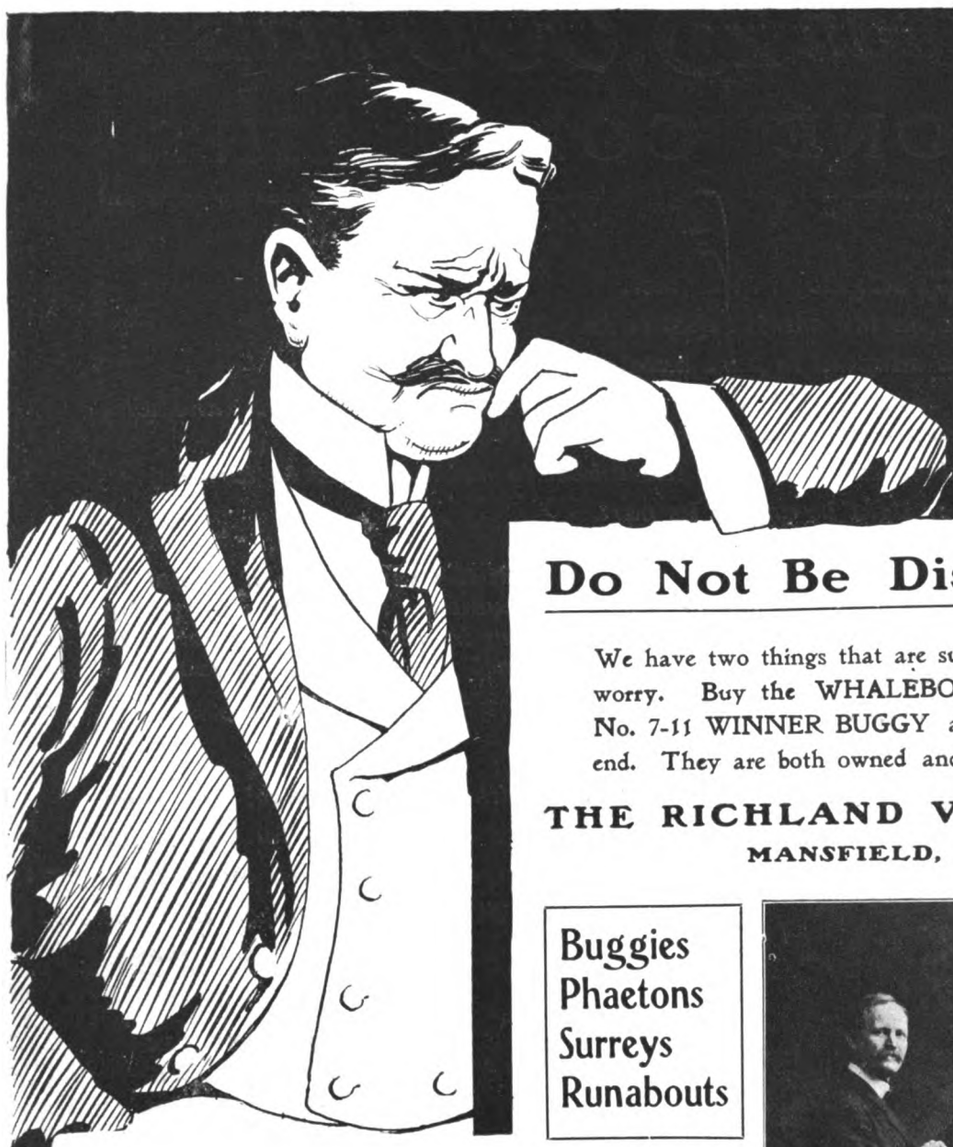
Carriage Dealers' Convention, New York, October 14th to 19th.

Carriage Builders' Convention, Cincinnati, October 20th to 26th.

Tri-State Exhibit, Cincinnati, November 18th to 23rd.

The Buffalo Spring & Gear Co.
Buffalo, N. Y.

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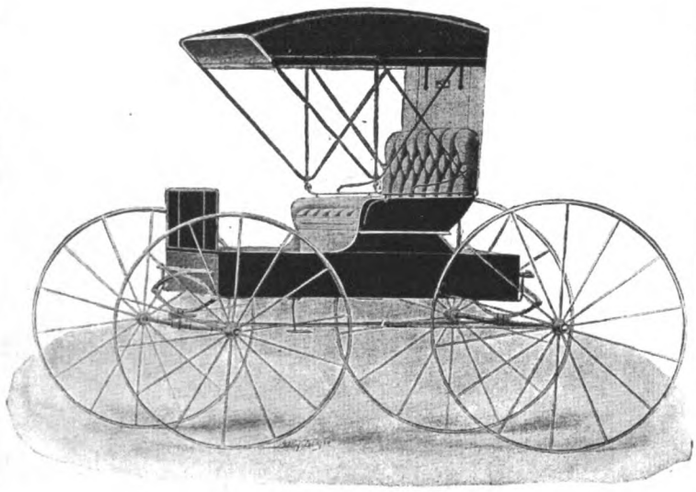


Do Not Be Discouraged.

We have two things that are sure cures for that look of worry. Buy the WHALEBONE WHEELS and the No. 7-11 WINNER BUGGY and your trouble is at an end. They are both owned and controlled by

THE RICHLAND VEHICLE CO.,
MANSFIELD, OHIO.

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Phaetons
Surreys
Runabouts



No. 7-11 Winner Buggy.



WARE BROS

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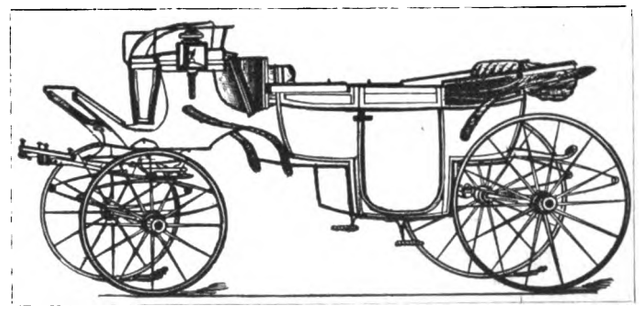
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NEW HAVEN, CONN.

..Builders of..

LIGHT AND HEAVY CARRIAGES

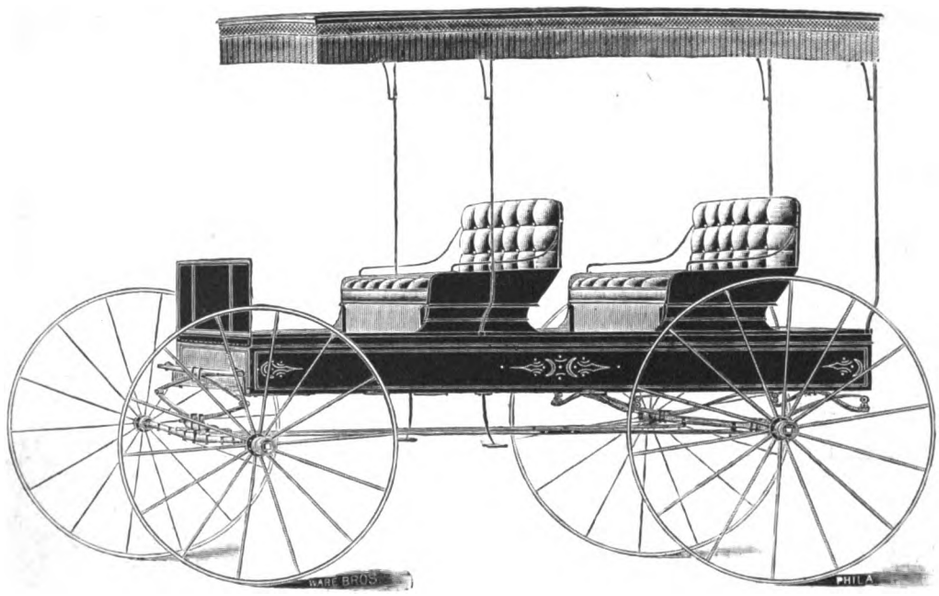
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WOULD you like to place your orders for first-class BODIES, also practical GEAR WOODWORK, Properly Made? COUPE SHAFTS with Irons Complete. STIFF COACH POLES, all Sizes. We can serve promptly. Practical AUTOMOBILE GEARS, with or without BODIES.

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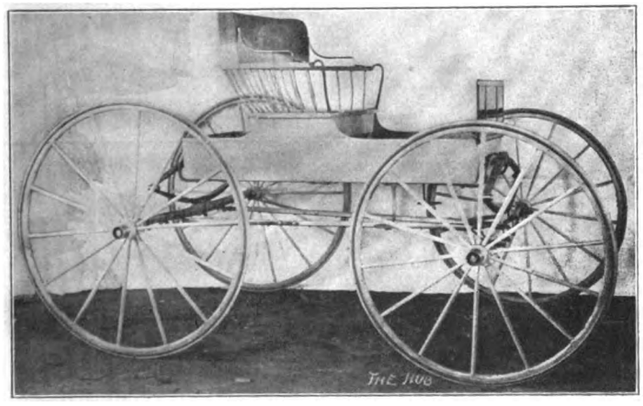
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WAIT FOR OUR PRICES

WE SHALL OFFER THE BEST VALUE IN SPRING WAGONS
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Manufacturers of

Bodies and Gears

OF ALL KINDS

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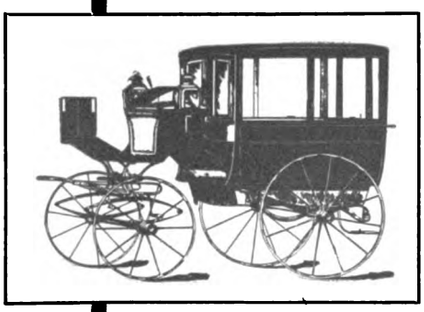
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Please mention "The Hub" when you write.

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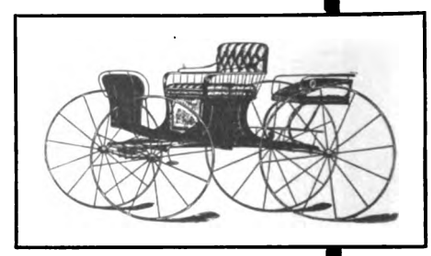
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WATERTOWN, N. Y.

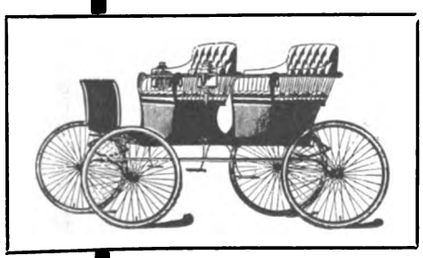


You can boom your "first of the year trade" by selling the Babcock. . . .

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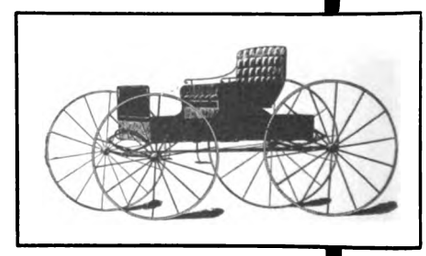


The Babcock's always sell. Dealers never carry over Babcock's.



The Babcock Catalogue will soon be ready. Send for it. . . . . .

Remember, Babcock first, last and all the time. . . . . .



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DETROIT, MICH.

Designers and Manufacturers of the Famous

HIGH SCHOOL LINE

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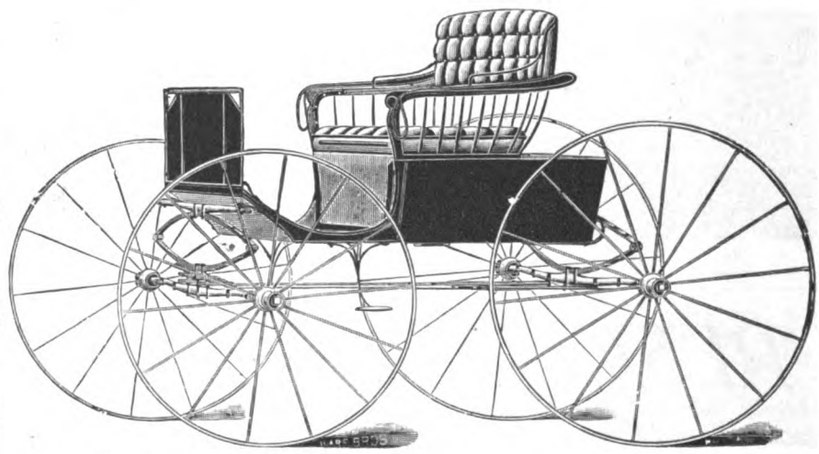
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Meet us at the New York Convention, week of October 13th, and become acquainted with our "High School Line."

We have nearly eighty graduates in our Class of '02 and we will introduce you to some of them—the smartest and most stylish set of "High School" girls ever shown.

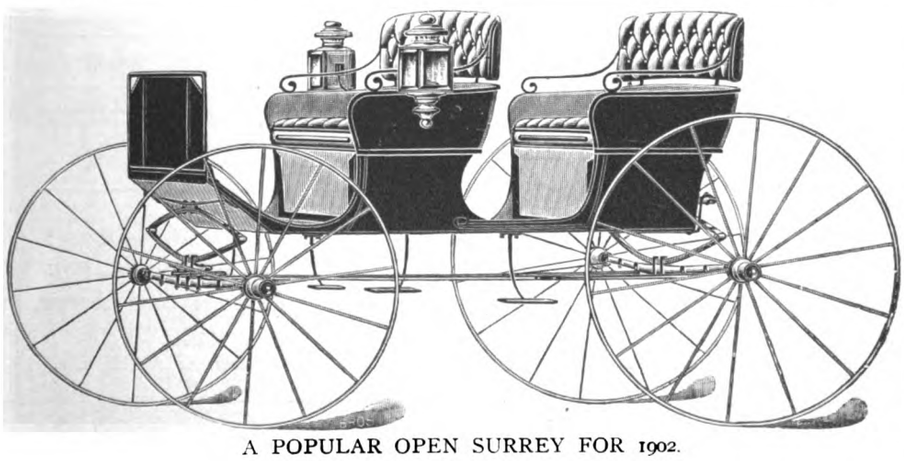
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Surreys
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We have 'em all--the right kind at prices that are right.



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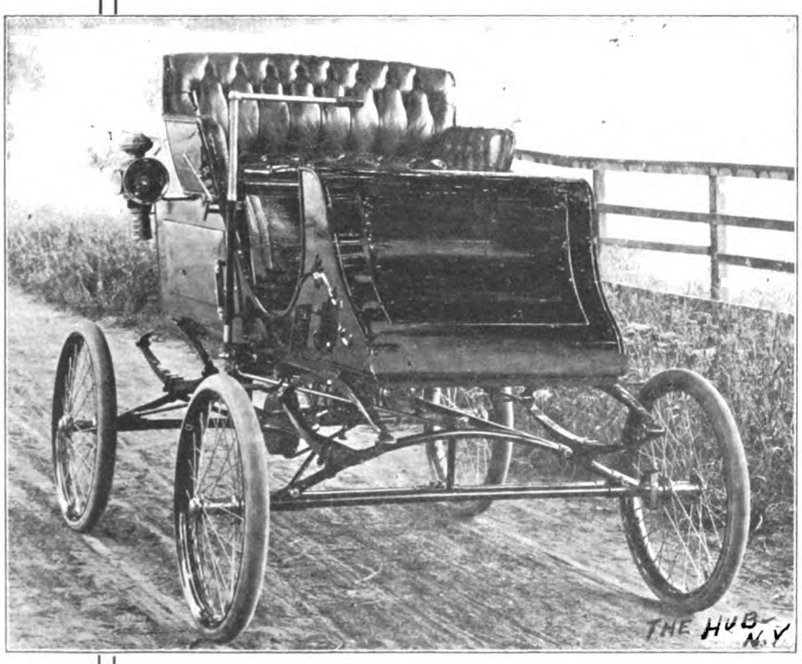
We are right in line with the nobbiest things for 1902, surpassing all previous years for style and construction, and possessing many special features each a little different from the other fellow's and a little better.

Send for illustrated catalogue. You will find our prices as attractive as our work.

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PRESCOTT STEAM CARRIAGE



TOURING CARS

and NEW STYLE OF COMBINATION

To Carry Two or Four Passengers all Facing Forward.

AIR PUMP. NO TORCH.
P.LOT LIGHT. NO EXPERIMENT.
RELIABILITY GUARANTEED.

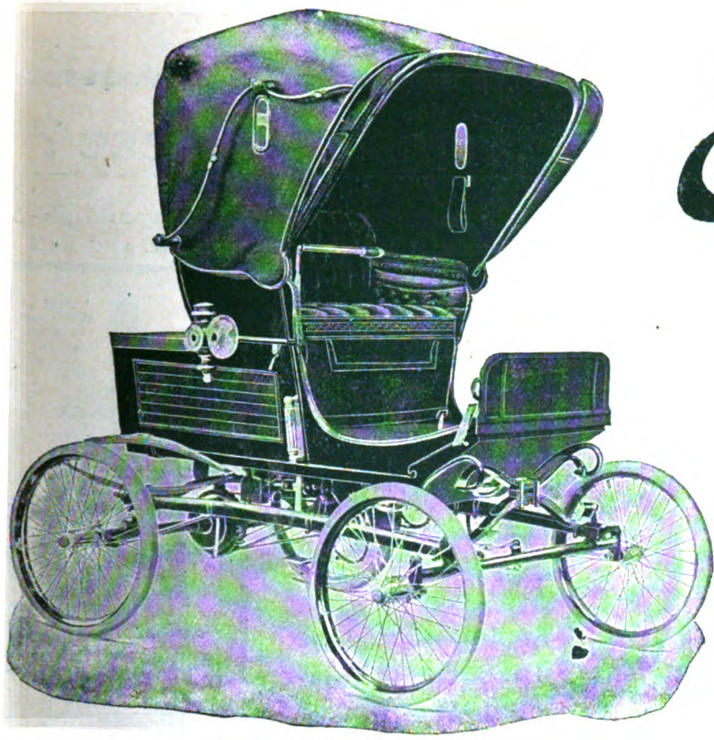
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New York to Rochester—394.3 miles in 32 hours and 21 minutes
Nelson Hill—Second Prize in Class B—4 minutes and 2 seconds

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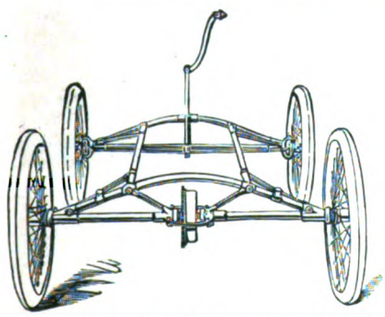
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Hardware, Forgings and Bendings
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"3 in 1" is used on automobiles for lubricating, cleaning, polishing and preventing rust. Quickly, easily and cheaply produces a high polish on nickel and steel parts, and lubricates perfectly the delicate motive mechanism.

Will not gum, collect dust or dry out. Prevents rust and tarnish, insuring the machine against damage when used in damp weather.

P. M. is the perfect axle lubricant. 97% pure graphite and "3 in 1" oil. Will not heat, gum or run—stays where it is put.

Your customers want "3 in 1" and "P. M." Will you or the other fellow sell them?

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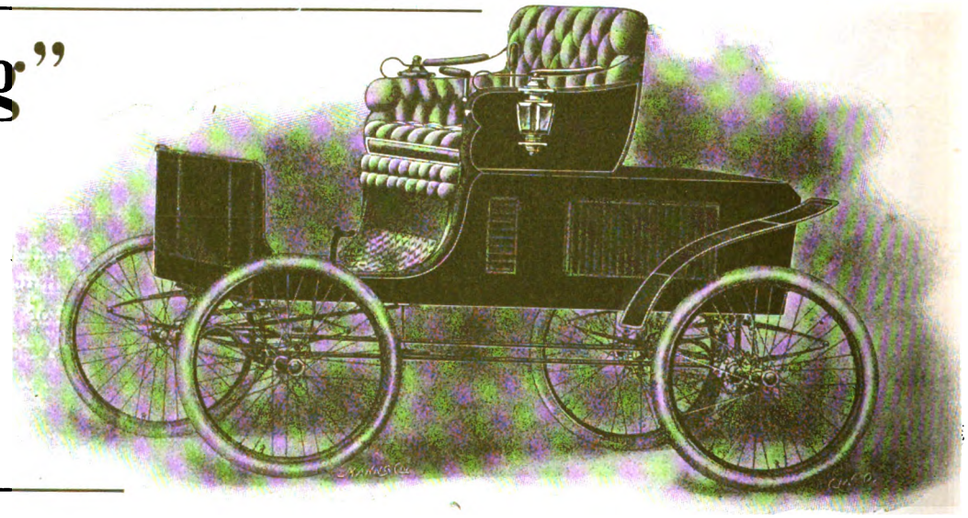
The "Darling" Automobile

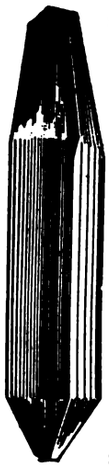
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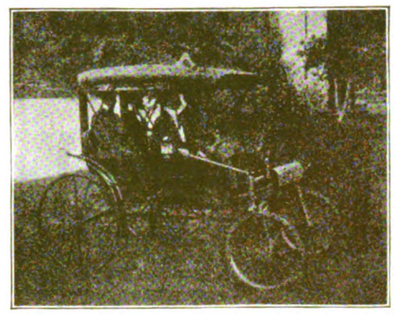
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Ample Power
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No Complications
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Our Tracto-Surrey, – Price, $625
Or with Rubber Tires on Rear Wheels, $650

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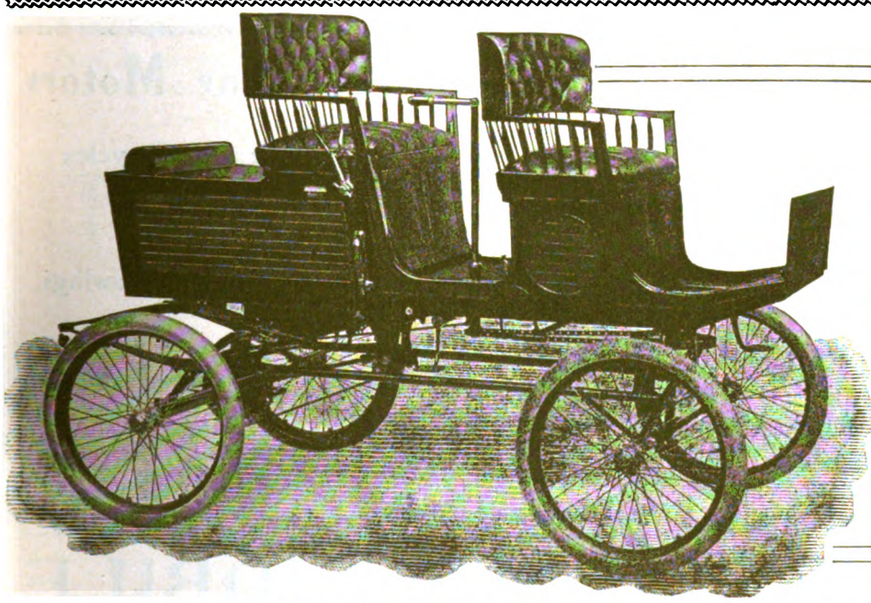
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Will track ordinary County roads. Gasoline tank holds 10 gallons, sufficient for 100 miles of travel, 12 to 18 mile speed.
Superb Hill climber.
Patent Pilot Light.
Forward and backward brakes.

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BUILT TO RUN 200 MILES WITHOUT REFILLING.
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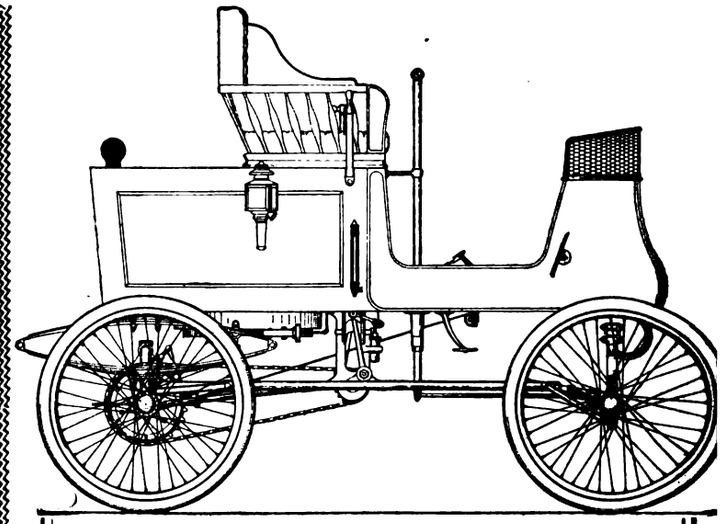
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Also special engines for carriage-men and others to construct their own vehicles.

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Boilers, Engines, Compensating Gears, Running Gears, Complete Wheels, Sold to the Trade.

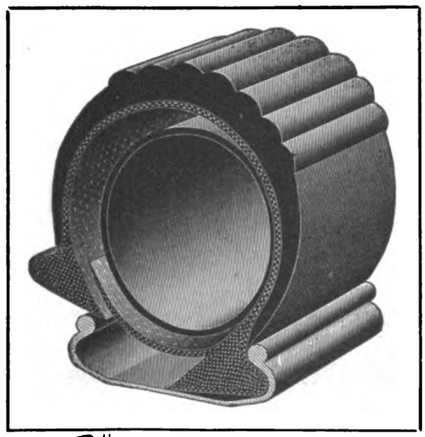
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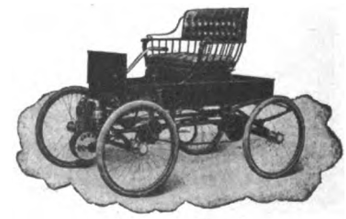
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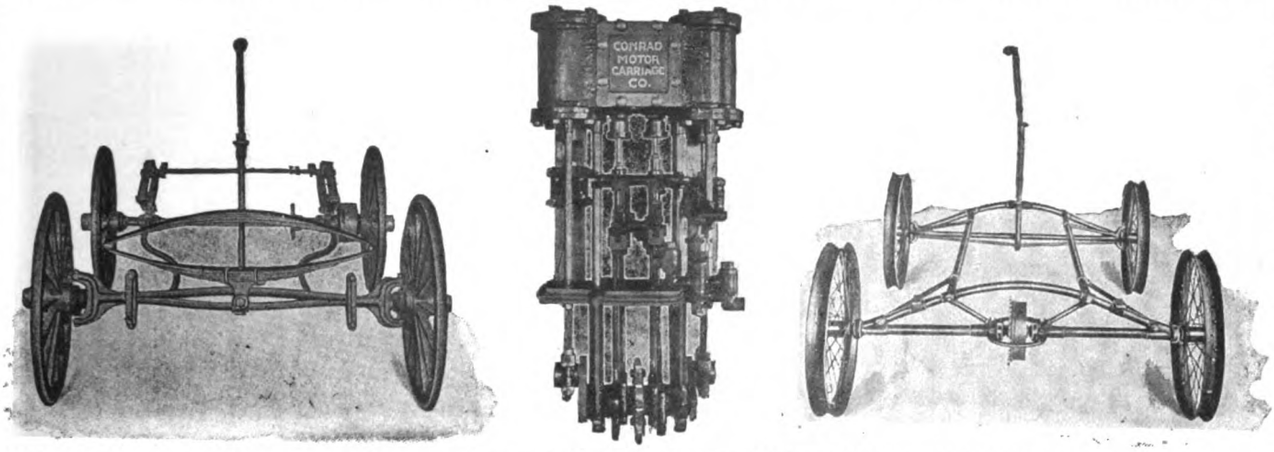


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STEAM DELIVERY WAGONS.
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Carriage Builders, build your own Automobiles. We can furnish you the parts, together with blue prints, and all necessary data, for piping up and assembling your first jobs.

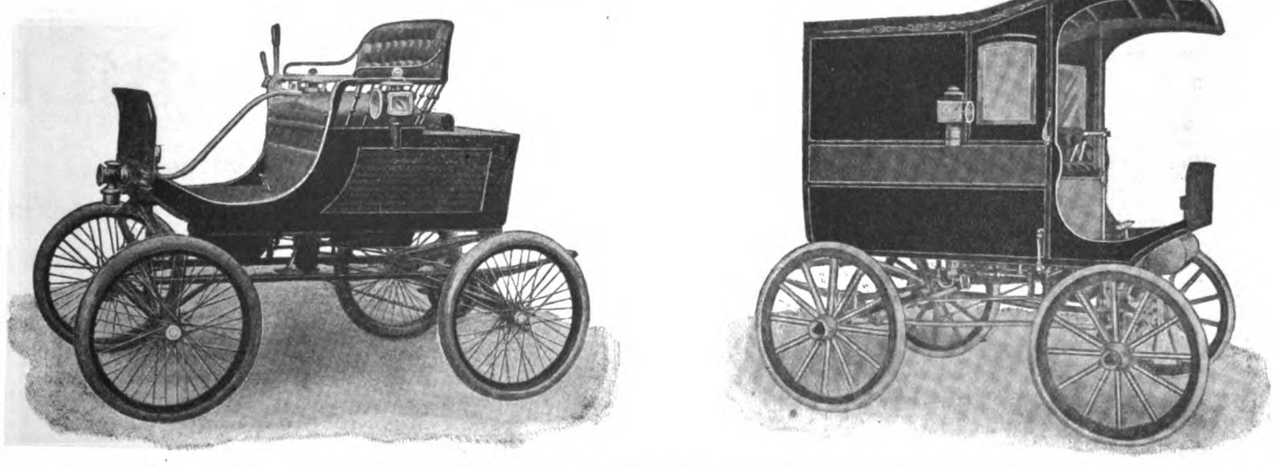
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THE "MOBILE" A CARRIAGE FOR EVERY-DAY USE.

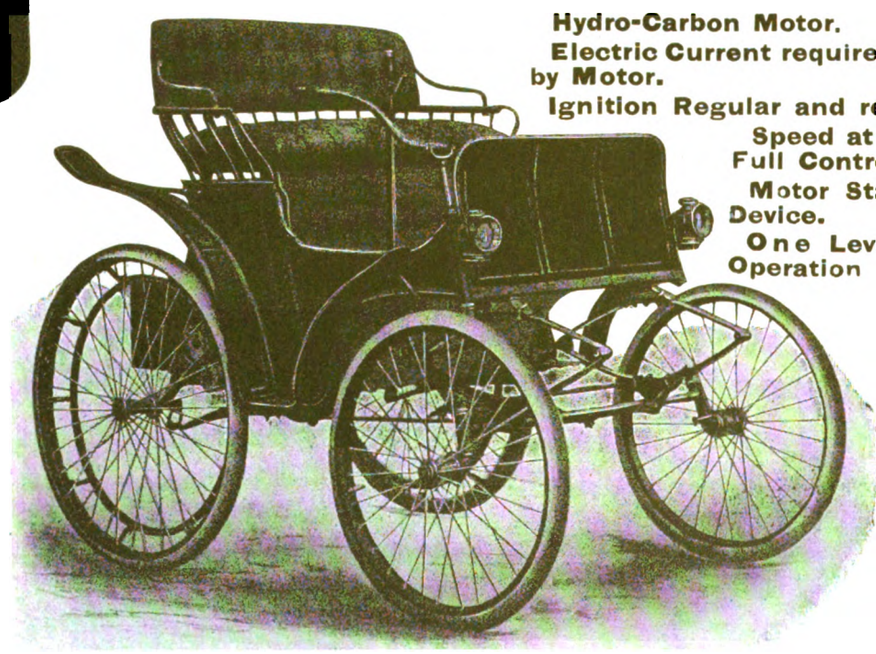
ON June 10th, four "Mobiles" started in the middle of the afternoon from the factory of The Mobile Company of America at Kingsland-Point-on-the-Hudson and ran to West Point, reaching the ferry at Garrisons in time for the 5:15 boat. Two hours and a half were spent in running about the Military Academy roads, then, after dinner, the four carriages started home by moonlight. The road from Kingsland Point to West Point is hilly, with many steep gradients scattered over its length; but from the State Camp at Peekskill through the Highlands of the Hudson to West Point occur long climbs and very steep and rough roads. The distance traveled was approximately, including the running at the Academy grounds, sixty-five miles. Not a delay or accident of any kind occurred; not a moment's worry to anyone of the eight people who made the journey. The "Mobiles" were in as good condition at the end as at the start—not one, but the entire four—and one of them had come up from New York to Kingsland Point before starting for West Point.

This gives an idea of what the "Mobile" is—a splendid piece of machinery, satisfactory in all its parts, of the best quality and workmanship throughout. Price, $750. All visitors can inspect every department of the manufacture of "Mobiles." Twenty-five trains stop at Philipse Manor, the station on the company's grounds.

For information regarding "Mobiles" address

THE "MOBILE" COMPANY OF AMERICA,
PHILIPSE MANOR STATION, TARRYTOWN-ON-THE HUDSON, N. Y

OAKMAN MOTOR VEHICLE.



Hydro-Carbon Motor.

Electric Current required for Ignition provided by Motor.

Ignition Regular and reliable.

Speed at Will of Operator and under Full Control.

Motor Started from Seat by Simple Device.

One Lever Controls every Required Operation except Steering.

Cost of Operating Less than One-Quarter Cent per Mile.

Free from Odor.

Practically Noiseless.

Very Attractive.

Simple in Construction and Durable.

Weight 475 Pounds.

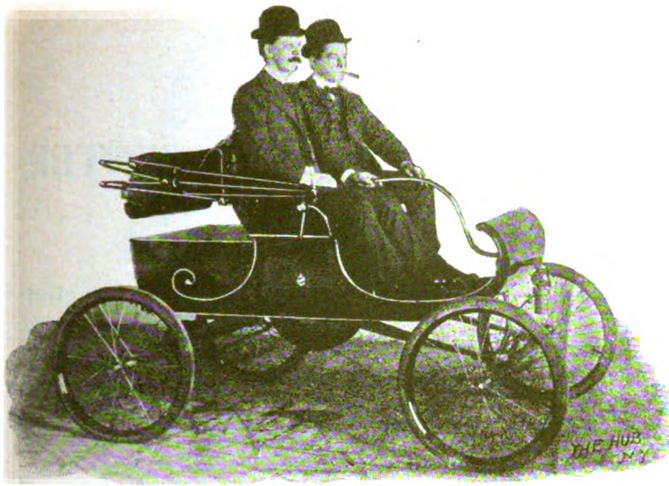
Style No. 120.

AMERICAN VEHICLE CO., MANUFACTURERS.

45 BROADWAY, NEW YORK.

Please mention "The Hub" when you write.

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THE popularity of the "Oldsmobile" has become so marked that we take this opportunity to notify all imitators and infringers that, while our motor is covered by our engine and designed patents, we have a number of applications for patents upon the mechanical improvements in our device, which are allowed, covering nearly every part of the machine.

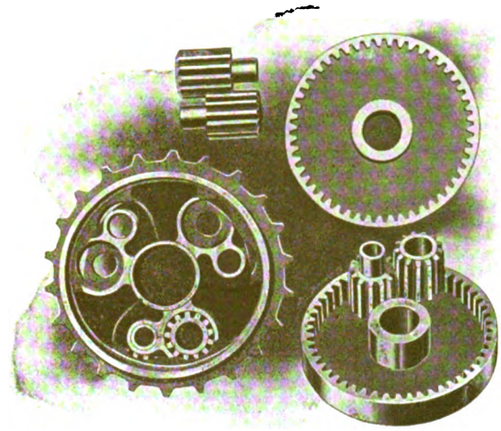
ILLUSTRATED CATALOG ON APPLICATION.

Olds Motor Works,

53 CONCORD AVENUE,
DETROIT, MICHIGAN.

See Model 3.

IT'S ANOTHER OF OUR SPUR EQUALIZING GEARS FOR AUTOMOBILES.



There are no studs, the pinions bear on the peripheries of the teeth. Spur internal drive gears. No end thrust. No tendency to spread.

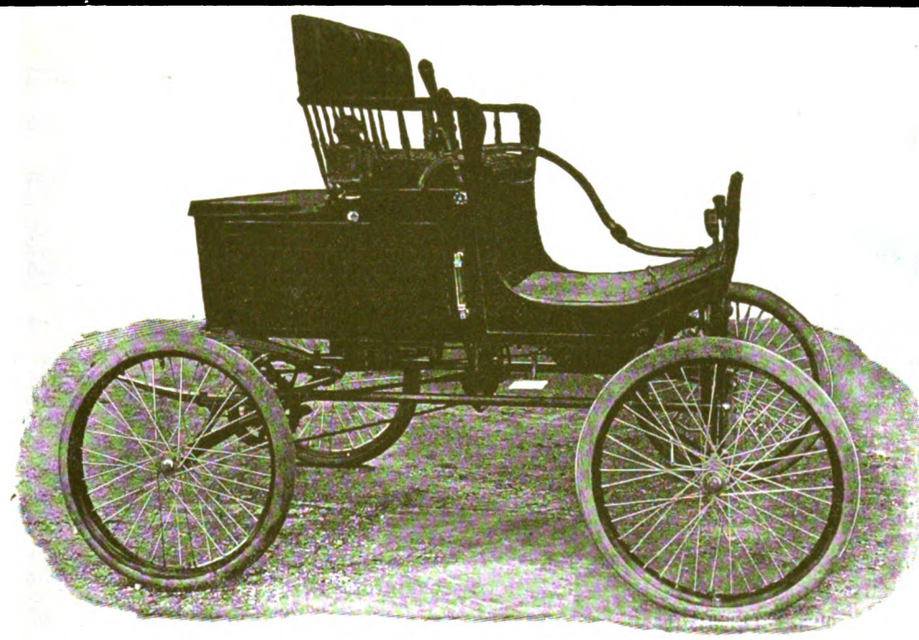
Model 3 is one of our strongest, most durable differentials.

Automobile sprockets of all kinds made to order.

Our complete line of 6 models will be exhibited at Madison Square Garden, New York City, November 2 to 9, by Chas. E. Miller. Spaces 57, 58 and 59.

BROWN-LIPE GEAR CO.,

212 S. Geddes St., Syracuse, N. Y.



IN recognition of the importance of the industry established by The "Mobile" Company of America at Kingsland-Point-on-the-Hudson, the New York Central & Hudson River Railroad has established a station at the factory of The "Mobile" Company with a service of twenty-five trains a day.

The original Philipse Manor, two hundred and twenty years old, still stands on the company's property, and the railroad company has appropriately, in view of its historical and literary associations, given this name to the station. The run from the Grand Central Station in New York is one hour. The manor house and old mill and Sleepy Hollow are part of the company's property, connected by the Headless Horseman's Bridge. The old Dutch Church, and Washington Irving's grave and the monument marking the spot where Andrè was captured, are in the immediate vicinity. When you visit New York, you will find a trip to the factory of

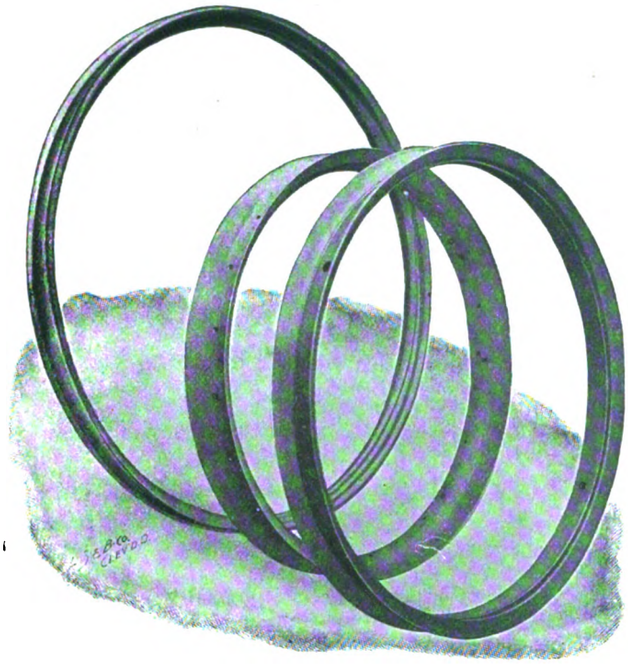
THE "MOBILE" COMPANY OF AMERICA

quite worth a half day's outing. Kingsland Point itself is considered to be the most beautiful section of the Hudson. The visitor is looked after by The "Mobile" Company's corps of demonstrators, taken for a ride in a horseless carriage, and shown all the different processes which enter into the fifteen departments required to manufacture a horseless carriage. He may inspect both quality of material and workmanship, see the new carriages tested as they are taken from the works one after another, and have every opportunity to satisfy himself of the excellence of the carriage in every particular. **Price, $750 Complete.**

THE "MOBILE" COMPANY OF AMERICA, Philipse Manor Station, Tarrytown, N. Y.

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STEEL RIMS



CRESCENT AND DROP CENTER PATTERNS.

Sizes – From 1¼ inches up to 4 inches in section; from 28 inches to 5 feet in diameter.

WE ALSO MANUFACTURE

SHEET STEEL MUDGUARDS.

Blue prints on application.

Vehicle cups for ball bearings, taking from ⅜ inch to ¾ inch balls.

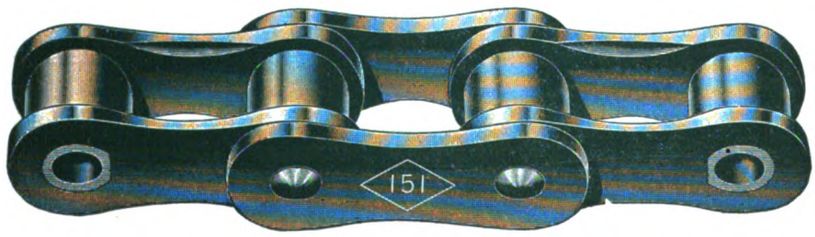
For further information apply to

The Automobile and Cycle Parts Co.

SMITH STAMPINGS FACTORY,

Milwaukee, Wis.

AUTOMOBILE CHAINS.



No. 151 "Diamond" Automobile Chain.

Pitch, 1¼ inches; width, ½ inch; diameter of rollers, ⅝ inch; thickness of sides, .125

This pattern has polished straw tempered hard rollers, hard steel bushings (**not split**), hard rivets, full polished blue 8 sides "chamfered." **Its tensile strength is 6,500 pounds.**

We have been making chains, and nothing else, for nine years. Our factory is exclusively equipped for chain manufacture. It is the largest chain plant in the world.

The characteristic qualities of "Diamond" Chains are **accuracy, strength, uniformity and finish.** Prices on application.

THE AUTOMOBILE AND CYCLE PARTS CO.

DIAMOND CHAIN FACTORY

INDIANAPOLIS, IND.



Tool Steel Balls.

We have the largest and best equipped plant in the world devoted to the manufacture of hardened and polished tool steel balls. The steel used is made expressly for us and is the result of a long and exhaustive series of experiments which have resulted in producing a uniformity of hardness, toughness and wearing qualities never before attained.

Our regular stock line consists of Tool Steel Balls in sizes from 1/16" to 4" in diameter. We can grind balls to any of the intermediate sizes at special prices which will be promptly quoted upon application. Can also furnish balls in Bessemer steel, brass, bell metal, etc.

The Automobile and Cycle Parts Co.,

CLEVELAND BALL AND PEDAL FACTORY.

CLEVELAND, OHIO.



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The Hub

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Copyright, 1901, by The Trade News Publishing Co., of N. Y.

Entered at the New York Post Office as Second Class matter.

VOL. XLIII. NEW YORK, OCTOBER, 1901. No. 7

Publishers

TRADE NEWS PUBLISHING CO. OF N. Y.

24-26 MURRAY STREET, NEW YORK.

W. H. TAYLOR, *President.*

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THE HUB is published monthly in the interests of employers and workmen connected with the manufacture of Carriages, Wagons, Sleighs, Automobiles and the Accessory trades, and also in the interests of Dealers.

Subscription Price for U. S., Canada, Mexico, Cuba, Porto Rico, Guam, The Philippines, and the Hawaiian Islands, $2.00, *payable strictly in advance.* Single copies, 25 cents. Remittances at risk of subscriber, unless by registered letter, or by draft, express, check, or post-office order payable to the order of TRADE NEWS PUBLISHING Co.

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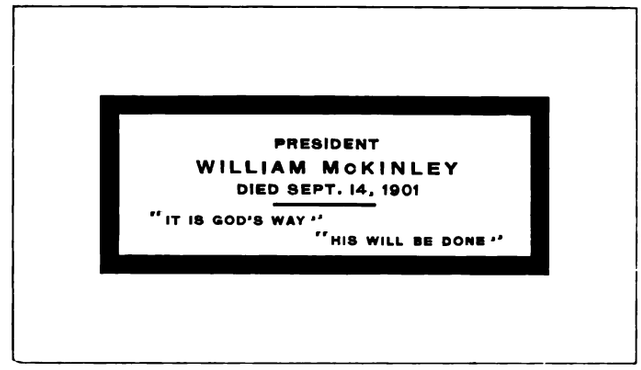
FOREIGN REPRESENTATIVES.

FRANCE.—L. Dupont, publisher of *Le Guide du Carrossier,* 78 Rue Boissiere, Paris. Subscription price, 15 francs, postpaid.

GERMANY.—Gustave Miesen, Bonn a. Rh. Subscription price, 12 marks, postpaid.

The Dealers' Convention.

THE Carriage and Harness Retail Dealers' Protective Association will hold their twelfth annual convention at the Grand Central Palace, beginning on Monday, October 14th, and continuing until Thursday, the 17th, when a special meeting will be held to discuss the catalogue house question. The exhibition of finished carriages will be held at the same time and place, and the event promises to be one of great importance to the carriage trade.



The Great Crime.

THE assassination of President McKinley stands as one of the foulest crimes of history. The entire civilized world feels the shock, while every true American heart experiences a personal anguish for the dead, realizing that in him a man who loved his country, a man of high and noble impulses, a President in whom was mingled fidelity, honor, justice and a measure of wisdom that made him a ruler to be trusted and to be loved, the highest type of an American citizen, and a Christian who entered the long sleep with quiet resignation. "God's finger touched him and he slept." His memory will be cherished by those who lived to know him, and of him, in life, and for him the craped and half masted flags of the nations encircle the world, paying such a tribute as was never before paid to a deceased ruler, and history will record his name high up on the list of men who were truly great. But what of the wretch whose bullet robbed the world of one so truly good and great. He must pay the penalty of his crime by an ignominious death, a penalty that seems mockery when the enormity of his deed is considered, but civilization can do no more. He will die, but they who incited him to crime will live, and perhaps escape punishment, as we doubt if it will be possible to prove enough against others to make it lawful to take their lives as well. The duty, however, will devolve upon our law makers to enact laws that will enable us to drive every anarchist and sympathizer with anarchy from our shores. They should not be allowed to pollute the air of our country with their vile vaporings. They stand as a band of murderers, a band whose hands are raised against everything that separates civilized man from the brute savage. They are idle pests whose presence is as dangerous as that of the most venomous reptile. We would welcome a law that would give them thirty days notice to leave the country, or suffer life confinement, where they can be made to work out their miserable lives. There is yet another class that must be considered if the lives of our

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rulers and public men are to be protected. These are the men who are responsible for "yellow journalism," publications that have gone to the very limit of the law in their abuse of the President by vile cartoons and carefully worded editorials, that could have but one effect upon the ignorant masses to which it panders. They who cannot read see in the cartoons that which incites them to deeds of violence, while they who can read find excuse for overt acts in the editorials, and who dares to say that this long continued and vicious assault upon President McKinley was not contributory to the deed. We may tolerate even such vile cartoons as those during an election, but when the people have by their ballots selected a president, common decency, if no higher motive can control publishers, of such journals, demands that the office be respected, so far at least, as to eliminate the buffoon's assault through vile cartoons. Liberty of the press does not grant a license to work on the minds of the ignorant in a way that may incite to murder. If the murder of President McKinley leads to the enactment of laws that will further guard the lives of those who will follow him as President, he will not have died in vain, and with him we may say "It is God's way"—"His will be done."

The New York Horse Show.

NEXT month the National Horse Show Association will hold its annual meeting at Madison Square Garden, New York City. This is the great horse show event of the year, and we may expect to see many grand turnouts, that will do credit to the owners, please the general public, and add to the reputation of American carriage builders, as well as to American horses, both harness and saddle. This is the opening event of the fashionable world for the winter season, and society turns out in its best attire to honor the horse and to exhibit the costumers' latest productions. It is a week of rare enjoyment and we are always sure to meet numbers of progressive carriage builders and designers among the visiting throngs. The outlook favors a great meeting this fall, and THE HUB renews its recommendation to all interested in horses, vehicles, harness and equipments to attend, as there are almost innumerable opportunities for picking up good points. Not only do we urge manufacturers but, we urge with equal force, dealers in carriages and harness. If these would attend such events and give strict attention to the exhibits they would be benefited, both in the knowledge of the drift of public taste, and also in the practical matter of equipping the many classes of vehicles now in general use. Let all attend who can.

The Industrial Outlook.

WE are inclined to doubt if ever before the business interests of this country were forced to meet a like number of unforeseen events in the same length of time, that singly and collectively threatened the prosperity of our people in every department of industry, as those of this year. The great strike of the steel workers, notwithstanding its extreme folly, was well calculated to cause a halt in other lines of production. A more senseless strike was never ordered, nor was there one that was more disastrous to trade organizations, as under the leadership of that man Shaffer the men were urged to believe that fidelity to the organization was more binding than the obligations to live up to a written contract. Fortunately there were men and organizations that had the courage to act honestly, and Shaffer was unable to lead them astray. This strike caused great loss to the wage earners, but did not inflict a material loss upon the steel company against whom the strike was aimed. It led to a slight advance in the prices of a few lines of steel products, but not enough to seriously interfere with the manufacturers of materials. Then came the summer drought through the southern corn belt, which before it was checked by copious rains, destroyed one half of the early corn crop, and did much lamage to the later crop, reducing, according to the estimates, the crop to about two thirds the amount of the preceding year. This taken together with the great strike seemed to be about all that our people could stand, but while the effects were causing serious apprehension, the assassin's bullet took the life of President McKinley and threw the entire nation in mourning, and the shock vibrated to all parts of the world, and then it was that the boldest began to waver in their faith. Could our country stand labor convulsion, short crops and the crowning disaster in the murder of a ruler who had, as few ever have had, the confidence of the people. Providentially the assassin's bullet did not do its work instantly, and the week that intervened between the shot and the death of the victim, was a week of alternate hope and fear, during which all prepared themselves for the worst. And when the dire calamity ended that great man's life there was no shock to the industrial or political interests, although the moral shock was so great that the entire nation grieved as though death had entered each individual family, and now although the signs of mourning are yet everywhere visible, all feel that the national life has not been weakened and the mantle of the dead president has fallen upon the shoulders of a clear headed, conservative, and energetic man, and that naught that has been done will check our industrial progress or impair our political institutions. With this feeling abroad, men enter their offices, workshops and marts of trade with renewed faith, and everywhere the wheels of industry attest the solidity of our prosperity. Looking back over the stirring events, and realizing hoy grandly all were met, we can but congratulate ourselves on the renewed proofs of the beneficence of the laws under which we live, and increased faith in the future. In almost every line of industry the outlook is most encouraging, and he must be blind indeed who does not see signals of prosperity flying from every hill top, giving encouragement to every honest citizen of our favored land.

Trade Criticisms.

RECENT events have further illustrated the lack of fairness among trade journal critics and confirms the belief that there are few cases in which criticism can be of benefit to the trade, owing to the acrimony of the one criticised. We have no one special case in view; on the contrary, there are several in which the critic

"Hides behind a magisterial air
His own offences and strips others bare."

The right to criticise belongs to all, the ability to criticise honestly to few, and as a result we see subjects treated in an offensive manner owing to the personalities therein, or answered by resenting the right of the critic to point out errors or wrongs. We believe that trade journalists could in no other way make their publications so valuable to their readers

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as by honest criticisms of methods taught in their reading columns, providing those criticisms are based upon a combat with a system, not with the individual who advocates the system, and by thus eliminating personalities call critical attention to methods. By doing this the expert would study more closely his position, and he would learn to respect the man who differs from him. But unfortunately such a course seems at the present time to be out of the reach of either parties to a controversy. The very man who resents criticism of his acts pleads the right to criticise the acts of others, and wonders why they do not take their medicine with a smile. There is much in the art of carriage building that should invite honest criticism, but he who ventures to do so perils his peace of mind, and is likely to find himself denounced as an imbecile by some one who does not possess half his knowledge, but makes up for his ignorance by a profusion of words.

The C. B. N. A.

You are surely going to the convention at Cincinnati, that we take for granted, but when you get there don't forget that you can do something to make the meeting a success. If you can't make a speech, sing or tell a tale, you can listen to those who can, and the greater the number of listeners, the greater the success of the meeting. There is but one C. B. N. A. It is the ideal social organization of business men, and the only one that aims to legislate for the good of all and never interferes with the individual interest of any. Cincinnati will take good care of all visitors, and all may feel assured of a right royal welcome, and he who fails to attend will miss a great social treat. We hope to be able to record the meeting as a banner one. We are assured that there will be a great exhibit of carriage materials and a line of goods that will please the trade. Manufacturers should take their order books with them, and be ready to secure early claims upon the manufacturers of materials. The year's trade has been a great one, profits have been satisfactory and the future is bright, and we may all thank God that our lot has been cast in a land where the poorest as well as the richest can alike stand forth as free men and where each has the freedom of choice as to his civil and religious liberty, but when feeling this he must resolve to transmit the same boon to his children by exterminating, if necessary, the nest of vipers who, under the red flag, wage war upon all that is honest, elevating and moral in human life.

C. H. A. T.

As per the announcement published elsewhere in this month's Hub, the Carriage and Harness Traveling Mens' Association will hold its annual convention in New York during the week of the Dealers' convention, the business meeting to be on Wednesday, October 16th, and a banquet at Delmonico's on Thursday evening, the 17th inst. It is expected that the attendance will be large and that the official reports will show an increased membership and an augmented treasury. The banquet will be the event of the meeting, as those having the matter in charge are sparing no pains to make the occasion one of rare interest. Speakers of known ability will address the traveling men, and as the spread will be an inviting one we may naturally expect a "feast of reason and a flow of soul." This annual gathering brings together traveling men from all parts and affords a most excellent opportunity for an interchange of social greetings, that will tend to link them the more closely together in the fraternal brotherhood of the C. H. A. T.

Description of Latest Styles.

LIGHT OUTING WAGON.

Scale, ½ in. to the foot.

(See Fashion Plate No. 524.)

Fashion Plate No. 524 illustrates a light outing wagon for two persons. If used without the hamper it makes an attractive vehicle for park or boulevard driving. It is very simple in its construction, the gear being arched axle with perch, and three springs. It is built high on medium light wheels. The sides of the body are perfectly plain; the riser is coach pattern; the seat panels high and plain; the oval handles being of bent wood.

Dimensions of Woodwork.—Body: Width, 32 in.; width of seat across top outside, 40 in.; across bottom outside, 36 in. Wheels: Wood hub; height, front, 39 in.; rear, 46 in.; hubs, length, 6½in.; diam. at center, 4¼ and 4½ in.; front end, 2¾ and 3 in.; back end, 3¼ and 3½ in.; size of spokes, 1⅜ and 1 7-16 in.; number of spokes, 12 and 14; stagger, ⅜ in.; depth of rims, 1 5-16 in.; tread of rims, 1 3-16 in.; depth of bands, front, 2¼ in.; back, ¾ in.; distance between center of axles, 48 in.

Dimensions of Ironwork.—Springs: Front, 36 in. long between centers of heads, with 7½ in. opening on main leaf; width of steel, 1¾ in.; number of plates, 4; thickness, main, No. 3 steel; rest, No. 4 steel; rear, 36 in. long, with 8 in. opening on main leaf; width of steel, 1⅜ in.; number of plates, 3; thickness, main, No. 3; rest, No. 4 steel; axles, 1 ¼ in.; tires, 1¼ by 5-16 in.; fifth wheel, 12 in. diam; track, outside, 4 ft. 8 in.

Painting.—Body: Frame of body, with bottom cross panels and seat panels, black; seat risers, light olive green, striped with a ⅛ in. line of carmine; medallions and hand rails, olive green, edged with carmine. Gear: Olive green, striped with a ⅛ in. line of carmine. Trimming: Green cloth.

BUTCHER'S CART.

Scale, ½ in. to the foot.

(See Fashion Plate No. 525.)

Fashion Plate No. 525 illustrates a convenient cart for retail butcher delivery. It is simple in construction and sufficiently large to answer all the requirements for light delivery. The frame is of oak and the panel, which is ⅜ in. thick, is secured to the inside, being grooved in flush with the frame. A rubber pad is placed against the front end to protect the panel from the heels of the driver.

Dimensions of Woodwork.—Body: Length at top, 5 ft.; at bottom, 4 ft. 6 in.; width across top, 3 ft. 8 in.; across bottom, 3 ft. 4 in. Wheels: Sarven; height, 4 ft. 2 in.; hubs, length, 10½ in.; diam. of flange, 7½ in.; front end, 3½ in.; back end, 4¼ in.; size of spokes, 1½ in.; number of spokes, 18; depth of rims, 1¾ in.; tread of rims, 1½ in.; depth of bands, front, 3 in.

Dimensions of Ironwork.—Springs: Side, 46 in. long between centers of heads, with 4 in. opening on main leaf; width of steel, 1¾ in.; number of plates, 6; thickness, No. 2 steel; cross, 44 in long, width 3½ in. set on main leaf; width of steel, 1¾ in.; number of plates, 5; thickness, No. 2 steel; axles, 1⅝ in.; tires, 1⅝ in. by ½ in.; track, outside, 4 ft. 8 in.

Painting.—Body, including seat and rail, carmine; champfers on moldings, black; the panels may be striped if desired. Gear: Yellow, striped black.

MARKET WAGON.

(Scale, ⅜ in. to the foot.

(See Fashion Plate No. 526.)

Fashion Plate No. 526 illustrates a style of produce wagon used by the large truck gardeners in the vicinity of New York City. It is one of the largest wagons of its class. It is fitted with a box for tools and supplies under the body, a shelving under the toe board for feed bags. The upper side panels are placed against a wide shelving

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which projects 12½ inches beyond the top rail of the main side frame. The dimensions of the frame work of the body are: Side sills, 3½ by 2 in.; two center sills, 2½ by 2 in.; front cross bars, 4 by 2 in.; tail bar, 3 by 2 in.; front corner posts, 3½ by 2½ in.; rear corners, 4 by 1¾ in.; standards, ⅞ by ⅞ in.; top rails, 1¾ by 1½ in.; center rails, 1 by ¾ in.

Dimensions of Woodwork.—Body: Length on top, outside, 11 ft. 6 in.; on bottom, 11 ft.; depth from rail to bottom of sill, 19½ in.; width on top, outside, 3 ft. 6 in.; on bottom, 3 ft. 2 in. Wheels: Sarven; height, front, 38 in.; rear, 55 in.; hubs, length, 12 in.; diam. of flange, 9 and 9½ in.; front end, 5¼ and 5¾ in.; back end, 6 and 6½ in.; size of spokes, 2 and 2⅛ in.; number of spokes, 16 and 18; depth of felloes, 2¾ in.; thread of felloes, 2⅜ in.; depth of front bands, 3 in.; distance between center of axles, 7 ft. 5 in.

Dimensions of Ironwork.—Springs: Front side, 46½ in. long between centers of heads, with 5½ in. opening on main leaf; width of steel, 3 in.; number of plates, 10; thickness, No. 2 steel; front cross, 37 in. long, with 5½ in. set; number of plates, 9; thickness, No. 2 steel; rear side, 46½ in. long, with 5½ in. opening on main leaf; width of steel, 3 in.; number of plates, 10; thickness, No. 2 steel; back cross, 37 in. long, with 5½ in. set on main leaf; number of plates, 9; thickness, No. 2 steel; extra cross spring over rear axle is 39 in. long; 3 in. steel; 9 plates; axles, 2¼ in.; tires, 2½ in. by ¾ in; roller, fifth wheel, 32 in. diam.; track, outside, 4 ft. 8 in.

Painting.—Body: Carmine; champfers, black, fine lining of panels and the scroll ornaments are in white: Gear: Yellow, striped black and fine lined with red.

PRODUCE WAGON.

Scale, ½ in. to the foot.

(See Fashion Plate No. 527.)

THE produce wagon, illustrated by Fashion Plate No. 527, is accessible alike at the front, center and rear. The bottom is divided by sliding partitions for separating the various vegetables and fruits to be carried; a second bottom or platform is provided for similar purpose. The back quarter is paneled, while all front of it is provided with roll up curtains, as is also the back. The back end has a folding step, while the steps on the side are heavy and drop well down so as to form standing space for the man when removing articles from the center section. The rack and platform on the front part provide extra carrying space for baskets, etc.

Dimensions of Woodwork.—Body: Length, 7 ft. 10 in.; width, 3 ft. 8 in. Wheels: Sarven; height, front, 36 in.; rear, 48 in.; hubs, length, 10½ in.; diam. of flange, 7½ in.; front end, 3¼ in.; back end, 4 in.; size of spokes, 1½ and 1⅝ in.; number of spokes, 16 and 16; depth of rims, 1¾ in.; tread of rims, 1 7-16 in.; depth of bands, front, 3 in.; distance between center of axles, 5 ft. 8 in.

Dimensions of Ironwork.—Springs: Front, 36 in. long between centers of heads, with 8 in. opening on main leaf; width of steel, 1¾ in.; number of plates, 6; thickness, No. 2 steel; rear, 36 in. long, with 8 in. opening on main leaf; width of steel, 1¾ in.; number of plates, 5; thickness, No. 2 steel; axles, front, 1¾ in.; rear, 1½ in.; tires, 1½ in. by 7-16 in. steel; fifth wheel, 14 in. diam.; track, outside, 4 ft. 8 in.

Painting.—Body: Upper panel, pea green; center, light yellow; lower railed section, red; the rear quarter panel is generally ornamented with paintings of fruits and vegetables. Gear: Yellow, striped black.

MINIATURE CABRIOLET.

(See "Latest Styles.")

PLATE CLXXIII. The feature of this season's pleasure carriages was the bringing out a line of cabriolets and victorias of reduced size, mainly in length, and doing away with the extra seat in the neck of the cabriolet. The one illustrated in this number of THE HUB shows one with change of back quarter line and cane workk upper panel. The extremely low front wheels are a noticeable feature.

DOUBLE SUSPENSION VICTORIA.

(See "Latest Styles.")

PLATE CLXXIV. Among the most showy turnouts at the summer resorts, the double suspension victoria so fashionable in years past, was frequently seen a few old styles, but there were enough of the new to indicate a growing demand for this most aristocratic turnout.

LADIES' SPIDER.

(See "Latest Styles.")

PLATE CLXXV. illustrates a ladies' spider with basket seats. This is one of the smallest and lightest of this year's styles of spider. As will be noticed it is geared short and is hung low. The harness shown is the plain English, a popular style at the present time.

TILBURY GIG.

(See "Latest Styles.")

PLATE CLXXVI. illustrates a very neat Tilbury gig and a plain gig harness, the property of J. H. Kennedy, of Toronto, Canada. It is a turnout that any gentleman who loves one that is quiet, but attractive, may be proud of.

CAMPAIGN WAGON.

(See "Latest Styles.")

PLATE CLXXVII. illustrates a campaign wagon built by James Le Compte, of Troy, N. Y. This wagon was used by a party of gentlemen who made a trip in it to the Adirondacks. The wagon body is 10 ft. long and 4 ft. 6 in. wide on the floor, with a 12 in. overhang; height, 5 ft. 6 in. in the clear; tailboard, 5 ft. long and 4 ft. 6 in. wide; this when down forms a table; cots for six people are placed inside. These when not in use are slid up to the roof and are secured by hooks, leaving the floor clear for tents and other camp fixtures. At the bottom are six lockers, size of an ordinary dress suit case, in which the personal belongings of the occupants are carried. The rear end of the wagon is fitted for carrying provisions and cooking utensils. Below this is an ice chest, and depending from the center is a box for carrying oats for the horses. The wheels are 3 and 4 feet; spokes, 1⅝ in.; weight of wagon, 2,250 lbs.; track, 4 ft. 6 in. and 5 ft. The storage capacity is large enough to carry stores sufficient for six people for three weeks, except such as are purchasable, such as dairy products and meats.

LARGEST PLEASURE WAGON.

(See "Latest Styles.")

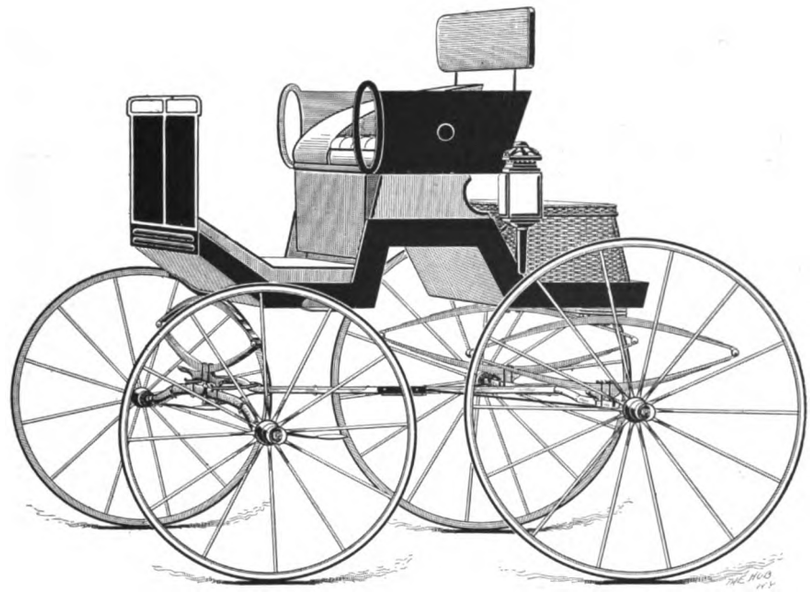
PLATE CLXXVIII. illustrates the great wagon, a print of which was published in August HUB. The wagon was built by Caley & Nash, Brighton, N. Y., for E. F. Higgins, the leading livery man of Rochester, N. Y. The wagon was intended for special service at the Pan-American, but owing to the demand upon it, it has been there but twice; it has been in constant use and is now engaged ahead for one month.

HAIL, COLUMBIA!

SIR THOMAS LIPTON is a right royal good antagonist, one whose pluck deserves success, but unfortunately for him, we build boats on this side that are a little too fast for the best he can buy on the other side of the big pond. The fault is not his, but the victory is ours, and we hug ourselves just a little, and will hold the cup another year, ready to battle for it in the future, as we have in the past, and while we drink to the health of Sir Thomas let us give a bumper in honor of the peerless Columbia, her talented designer and her owner, and a second quaff to Charley Barr and his gallant crew. Rah! rah! rah!

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Latest Styles. October, 1901.

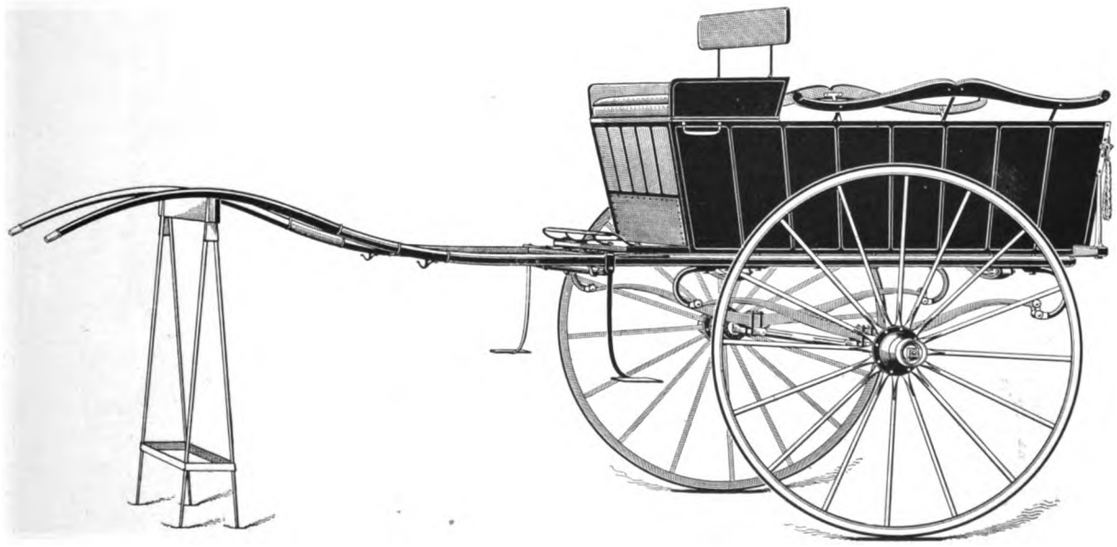


No. 524. Light Outing Wagon

SCALE, ½ INCH TO THE FOOT.

See description under "Latest Styles."

(Electrotype, $1.25.)



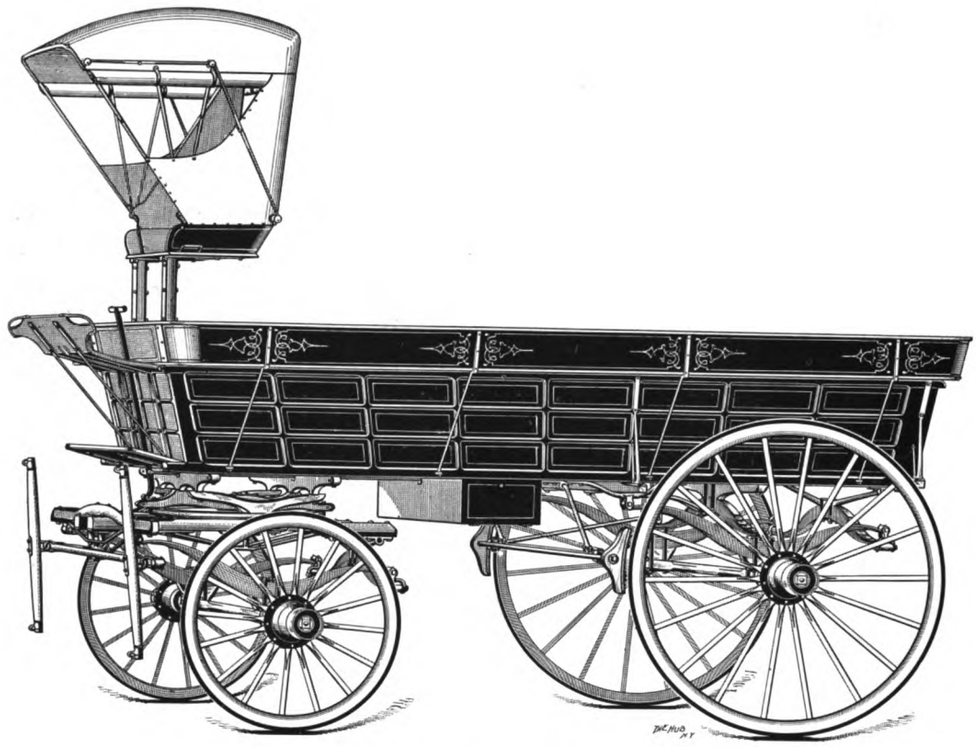
No. 525. Butcher's Cart.

SCALE, ½ INCH TO THE FOOT.

See description under "Latest Styles."

(Electrotype, $1.50.)

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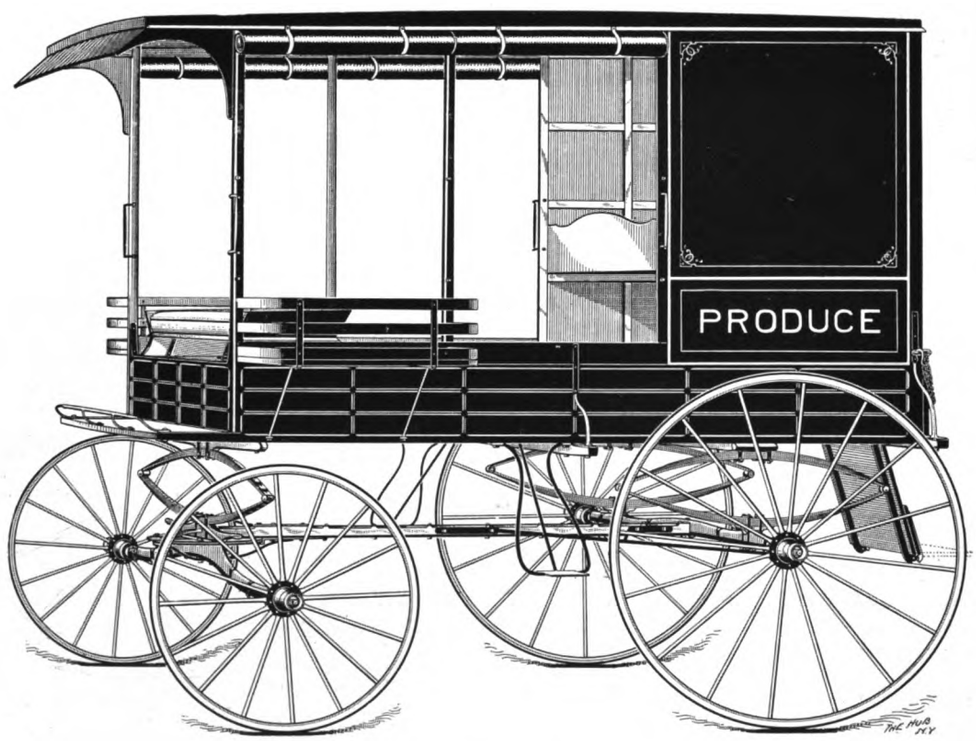


No. 526. Market Wagon.

SCALE, ¾ INCH TO THE FOOT.

See description under "Latest Styles."

(Electrotype, $1.50.)



No. 527. Produce Wagon.

SCALE, ½ INCH TO THE FOOT.

See description under "Latest Styles."

(Electrotype, $1.50.)

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Plate CLXXIII.

Miniature Cabriolet.

See description under "Latest Styles."

(Electrotype, $2.00.)



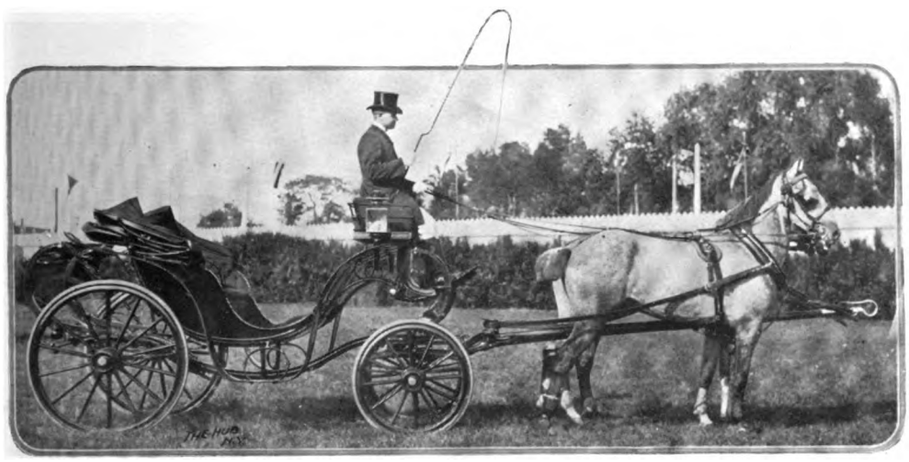


Plate CLXXIV.

Double Suspension Victoria.

See description under "Latest Styles."

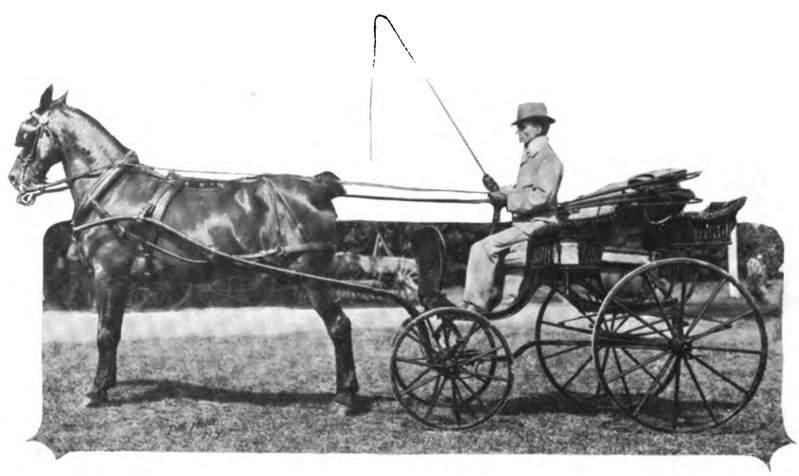
(Electrotype, $2.00.)

Plate CLXXV.

Ladies' Spider.

See description under "Latest Styles."

(Electrotype, $2.00.)



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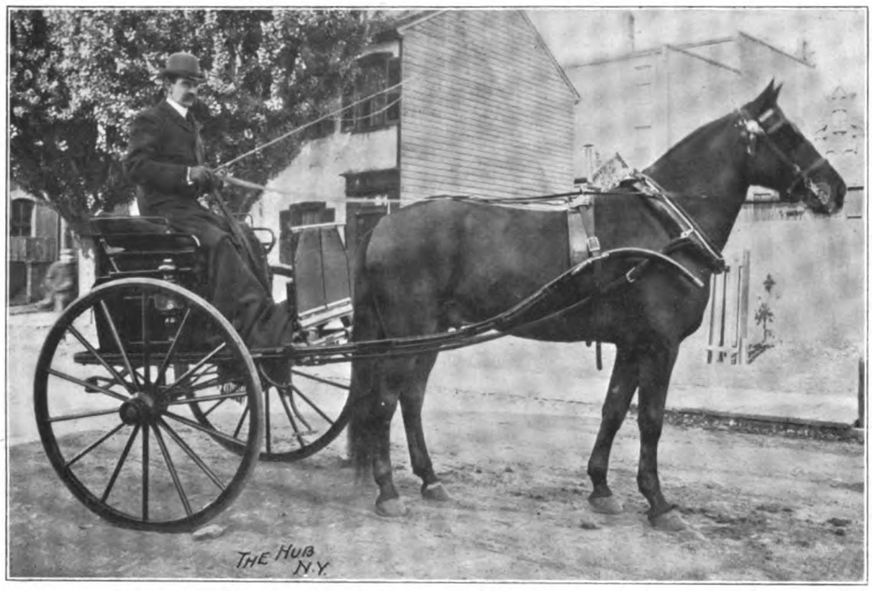


Plate CLXXVI.

Tilbury Gig.

See description under "Latest Styles."

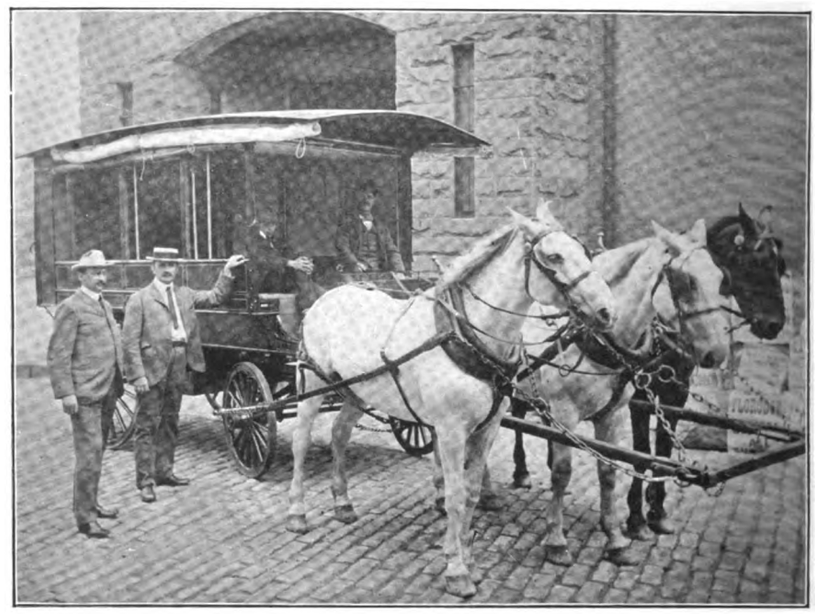
(Electrotype, $2.00.)

Plate CLXXVII.

Camping Wagon.

See description under "Latest Styles."

(Electrotype, $2.00.)



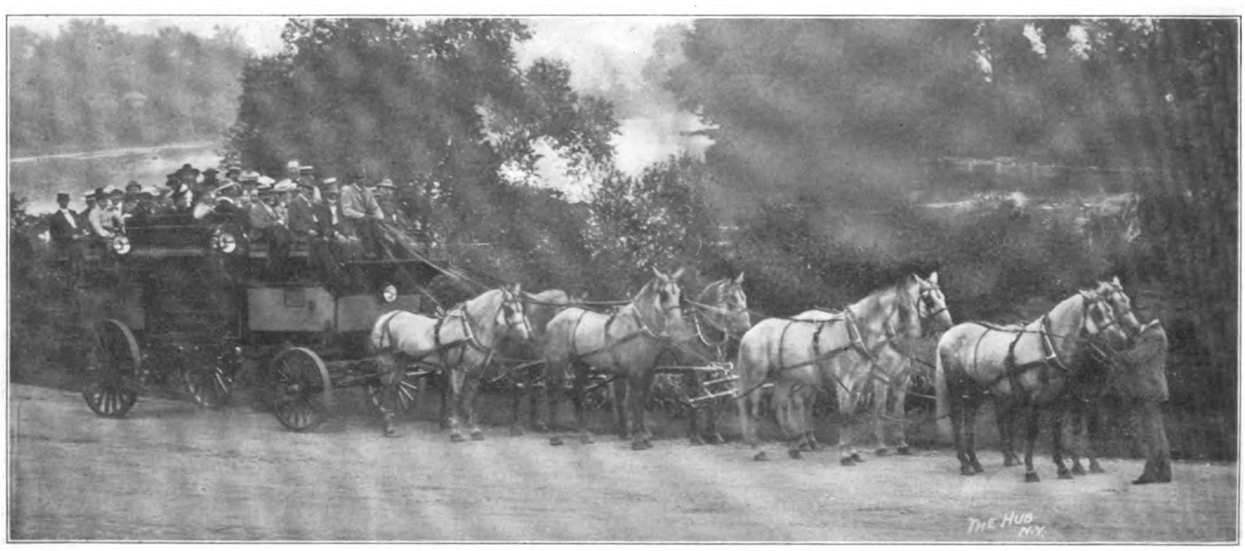


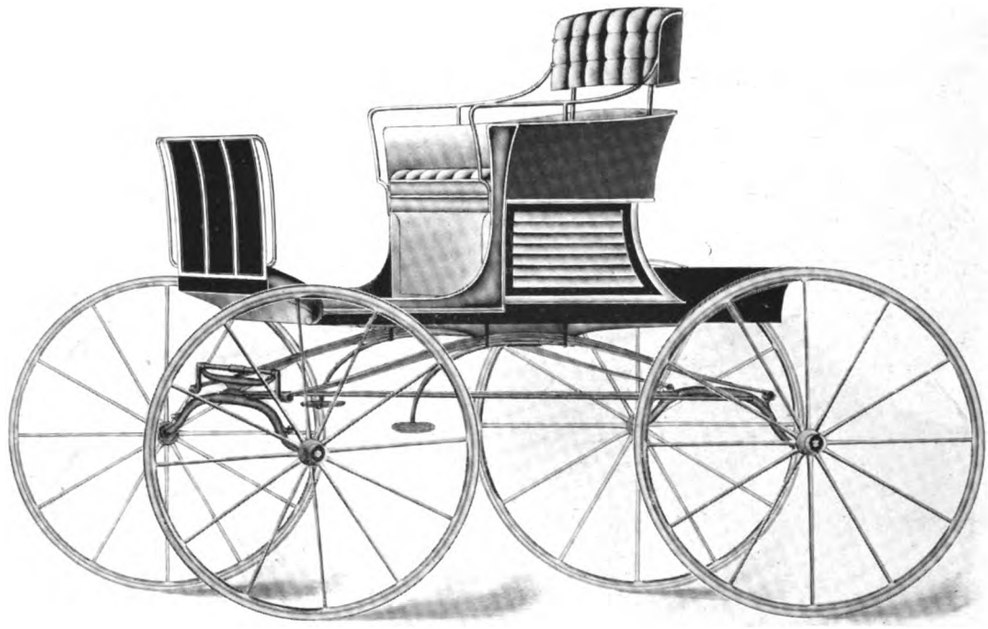
Plate CLXXVIII.

The Largest Pleasure Wagon in the World, Loaded, and the Eight Horse Team.

See description under "Latest Styles."

(Electrotype, $2.00.)

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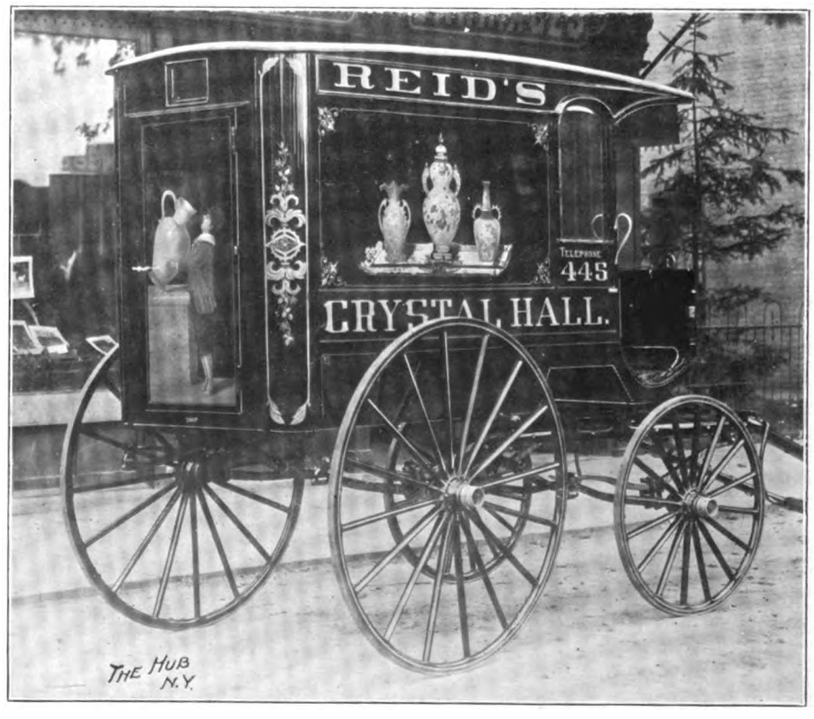


Side Spring
Driving Wagon

Built by Shields & Co.,
Amesbury, Mass.



Exhibit of E. N. Heney & Co.,
Montreal, at
Toronto Exposition.



Glass and Crockery Wagon.

Built by H. G. Abbott, London, Ont.
Prize Winner at London, Ont., Exposition

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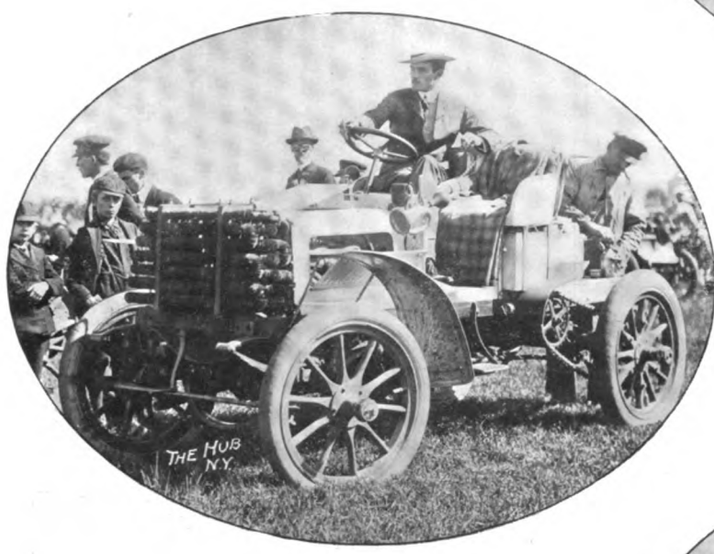
Wm. K. Vanderbilt in His Imported Racer.

(See "Newport Automobile Races.")

Foxhall Keene in His Powerful More Motor.

(See "Newport Automobile Races.")



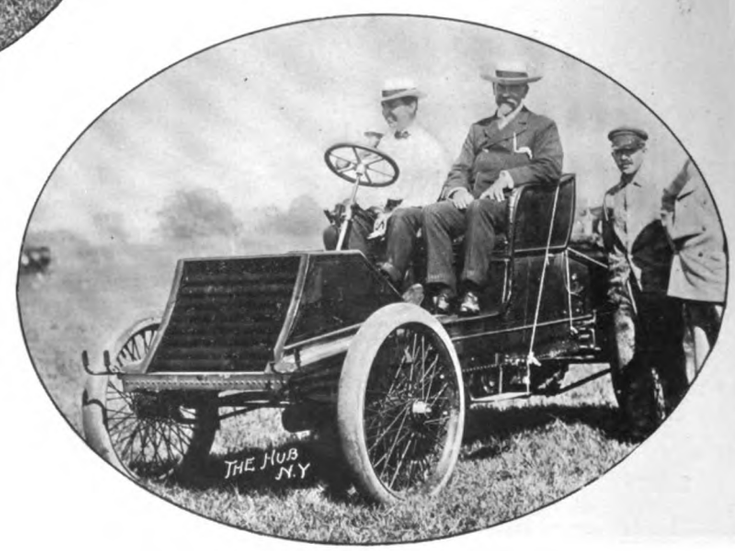


David Wolfe Bishop in His Panhard Racer.

(See "Newport Automobile Races.")

Wm N. Murray in His 40 Horse Power Winton Motor

(See "Newport Automobile Races.")



Motors at the Newport Automobile Races.

Newport, R. I., August 30, 1901.

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C. Arthur Benjamin in "Locomobile."



Rambler, Built by the American Bicycle Co.



Century Motor Vehicle Co.'s Surrey.



G. B. Pettengill, of Cleveland, in a Columbia Runabout

Five Hundred Mile Endurance Test.

For description, see "Automobile Department."

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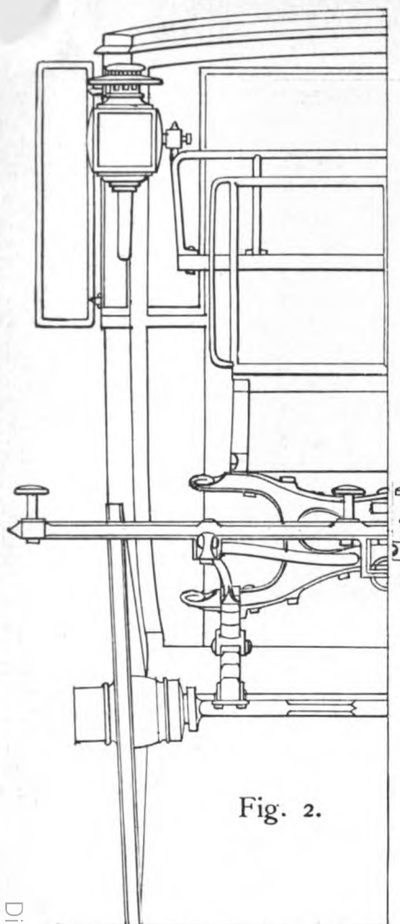


Fig. 2.

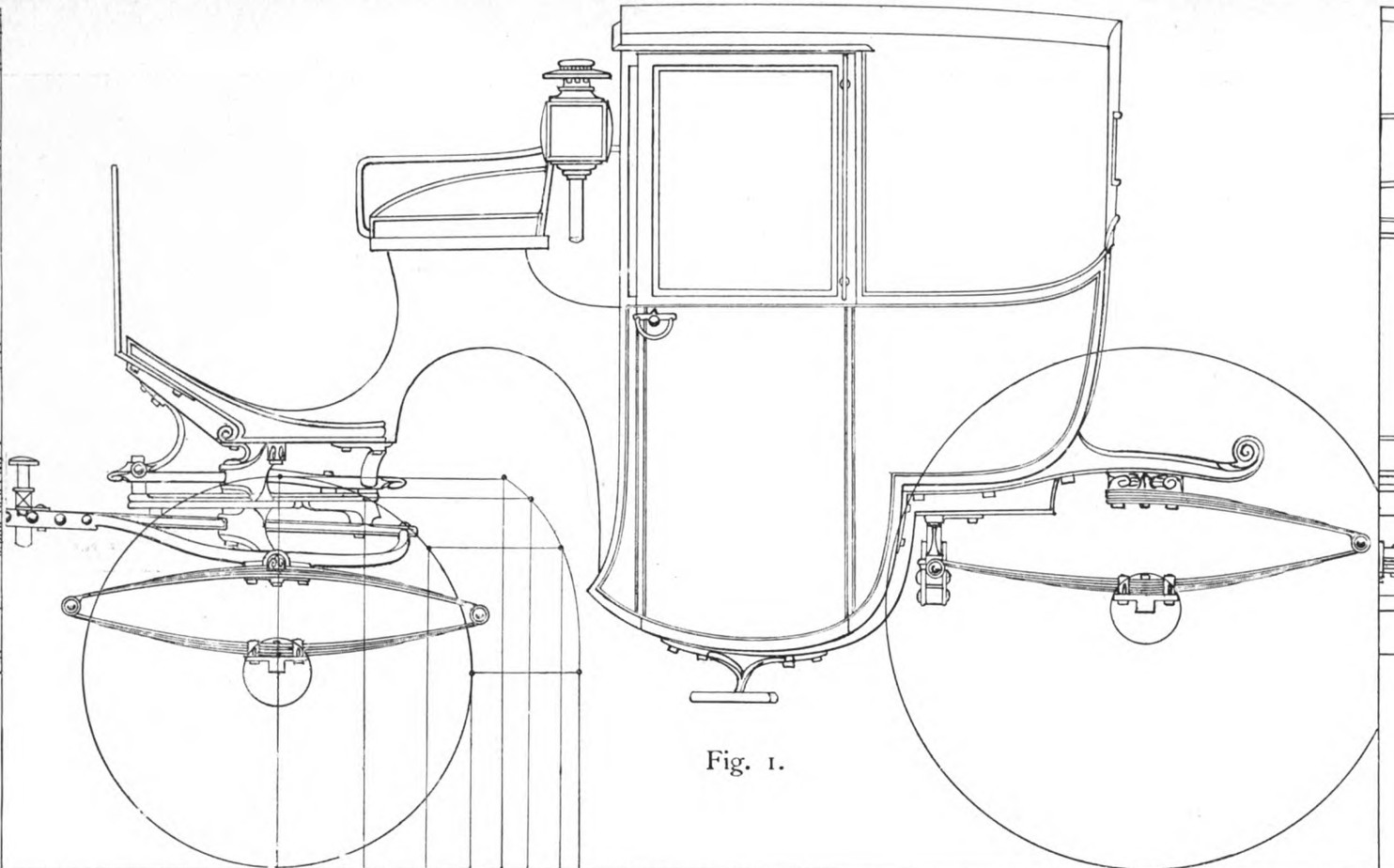


Fig. 1.

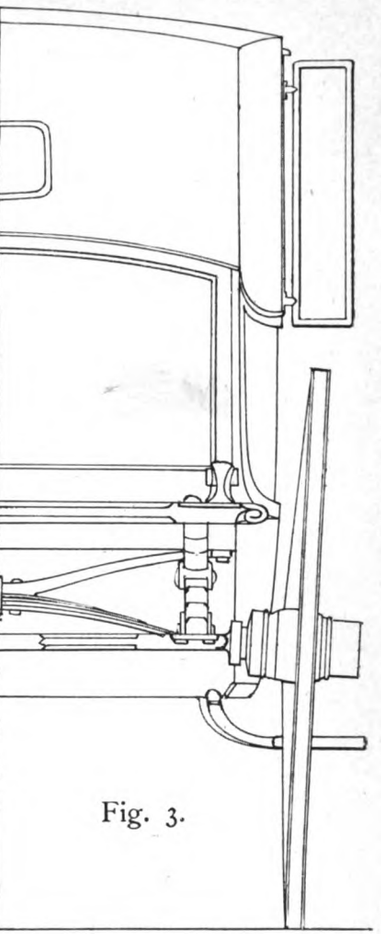
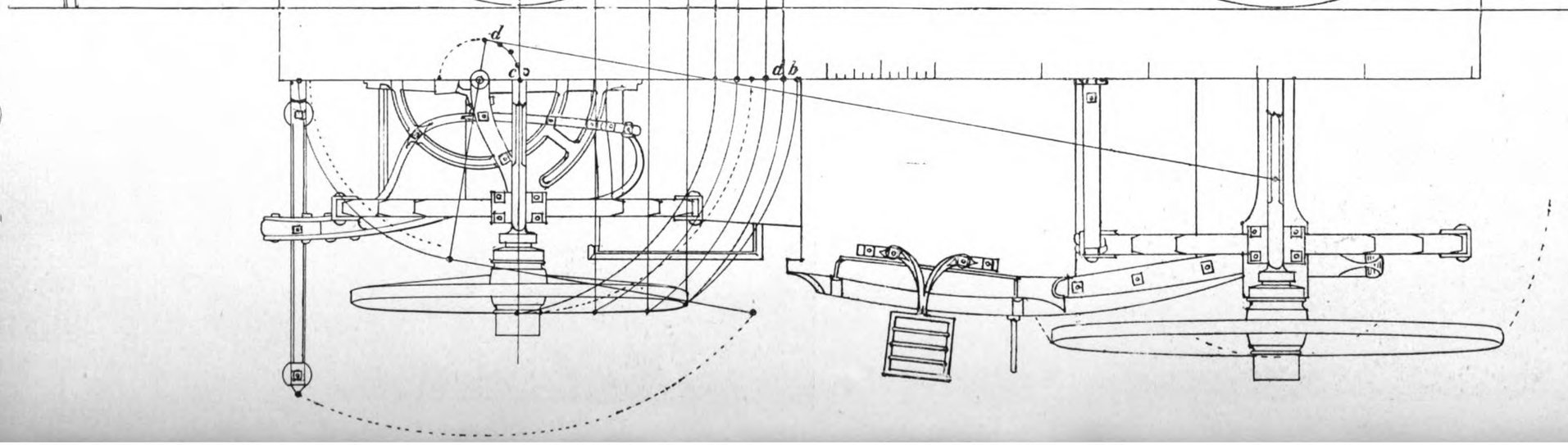


Fig. 3.



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CARRIAGE TECHNICAL DEPARTMENT.

Comprising the Wood, Smith, Paint and Trimming Shops.

WORKING DRAWING OF A BROUGHAM.

If we examine the outline construction of the original brougham, as built in London, England, for Lord Brougham, by the coach builder, Robertson, something like eighty years ago, a resemblance to it will be noticed in the brougham shown on page 284. This shows a change in the boot and crest panel. In the original, however, the door shut over a solid bottomside instead of cutting through to the bottom of the rocker, consequently the lower corners of the door were round, but the top rail of the door, like that in our drawing, which above the door belt is angular or square; the pump handles are also much the same; the coupe pillar, the quarters and belt line are identical. The fence rail of the front light was built some three and a half inches above that of the door, which was then, and would be now, a change looking towards an improvement. There is no reason why we should continue to make Brougham bodies as we have always built them, when by a few changes, we can create a new and pleasing design.

If we examine the outline construction of a round line, straight front Brougham, as our drawing illustrates, we see that the curved edges are composed of seven turned lines, four concave and three convex, namely, the three concave lines of the boot, with that of the coupe pillar forming the boot or the coach seat; second, the three convex lines, including the door, the quarter and the belt. The line of the coupe pillar is the dividing edge, or more properly speaking, the projecting edge in the vertical direction, and the belt line is the horizontal edge of the division of the side construction of the body. Now when we understand this outline construction of the form of the Brougham body, and estimate the importance of having each line harmonize with the other, we can consider the poise which results from their arrangement upon the flat surface of the paper, and when we also remember that in their practical working out upon the surfaces of the framing pieces, the surfaces like the edges will be round, we can then proceed to make the drawings of the Brougham to please the public eye. If we do not appreciate this problem—if we disregard its significance—the finished drawing and the finished body will be commonplace and a disappointment.

In this drawing the line of the boot is changed from the long flat appearance of the French fashion to a higher position corresponding to that of the lower line of the rear quarter, which is here mounted high upon a 50-inch wheel, with the spring clipped to a straight axle. We do this in order to obtain a pleasing round to the bottom of the door connecting the coupé pillar with the base moulding of the lower quarter, which approaches the latter in an oblique line, while that of the quarter starts away from this intersection in a strictly horizontal direction. There is, we may say, a certain position which the boot maintains to the body that will contribute to the design a striking expression and will crown the work with success, as about seven out of ten Brougham designs are so commonplace that they never attract more than a passing glance. If a draftsman produces three drawings of a Brougham two possibly will be rejected, as it is a rare instance for any one to succeed in creating a perfect proportioned Brougham body that will, when mounted on the carriage, give a faultless effect—one that all will agree is entirely satisfactory.

We have in this drawing succeeded in producing a side elevation that will suggest to the eye a round surface, as illustrated in the plan, Fig. 4; that is to say, we may from the cast of the side elevation, comprehend the vertical and horizontal curves as worked out on the panels of the door and quarters. The drawing suggests this contour without resorting to the painter's art of shading, without considering space or distance as in perspective. If we have a high boot we will also have a high front gear, one that will not be crowded into a lump. We make it so that each edge will be distinct from the other, so that the rounded or ovaled surfaces of the wood and iron can be traced out to their respective bearings, can be seen distinctly from any point of view, and thus show up a double or return curve or sweep to the best advantage, and when the gear is painted, striped and varnished the lines will be clearly in view, though we know that the gear is directly under the boot, and that the boot is as wide as the gear. If we consider all this in designing the brougham, is it not reasonable to suppose that we will approach near perfection in the completed carriage? And is it not worth while to study the effect of the lines that will beautify the surfaces which they inclose, rather than to be so particular about the practical construction? The practical or the mechanical part of the work will obviously take care of itself, for if the work is anything like honestly done, the carriage will always outlast the patience of the owner. No brougham nowadays is ever worn out save in its second hand ownership. In a majority of purchases the first owner seldom, if ever, soils the linings of the interior, and when sold as second hand is the time when its stability will be considered and finally tested in some livery stable or on the stand for hire.

The suspension of the body upon the springs and wheels is one on the most important parts of brougham making, and the method of doing the work differs in all first-class shops, while the principle which directs or guides the construction is the same in every instance, and every draftsman is supposed to know it. The front gear is in all broughams and coaches pivoted by means of a single bolt to a stationary, top gear fixed to the rockers or edged plates of the body, around which is circled a plate called a fifth wheel, and in two parts, one above the other. The top plate being fixed, does not turn, the bottom being fixed to the lower coach bed and to the inside futchels, turns about the king bolt to any desired position, the amount being determined by the point of the draw-bar, which, if prolonged beyond the lines upon the draft, will cause a collision with the side of the body, or one of the inside trace posts will collide with the scroll end of the top coach bed. The king bolt being stationed ahead of the center of the front axle, causes the wheels when turned under the arch of the boot provided for this purpose, to be carried ahead according to the points shown on the draft, Fig. 4, which is ½ in., as measured from *a* to *b*, the scale being ¾ in. to the foot, where 1-16th equals one inch; hence the king bolt is set ahead of the center of the wheels and axle a distance of 4½ in., and the amount which the locked wheel will displace in a nearly half turn, is therefore one-fourth of the amount which the center of the front axle will move about the king bolt, which is drawn and pointed off in the plan *c* to *d*. In this demonstration we have swung the trace of the tire from the king bolt and also that of the center of the axle, and thus discovered the difference.

It is, therefore, obvious that if we should give the front wheels and gear a half lock, then the displacement would be three inches toward the front; consequently the front axle and wheels would be set ahead a distance of 9 in., if reversed from the position shown on the drawing. Although a single bolt holds the front gear and wheels to the boot of the body, and draws the hind wheels along, yet it is one of the strongest couplings that a smith ever forges. The bolt passes through the coach beds at their center, and on the top plate is forged a boss, on to which is lathed a finger which enters the sleeve of a like forging of the bottom plate of the top coach bed and milled to a perfect fit, having a length of 1½ in. It is a socket coupling, through which the milled king bolt passes, which is ⅝ in. diameter. A hexagon shaped nut holds the fifth wheel plates together. In order to balance the pole, and also to offset the tendency of the gear and springs to dip at the front points, we enlarge the diameter of the circle at the rear of the king bolt, a distance equal to the amount we have set the king bolt ahead of the

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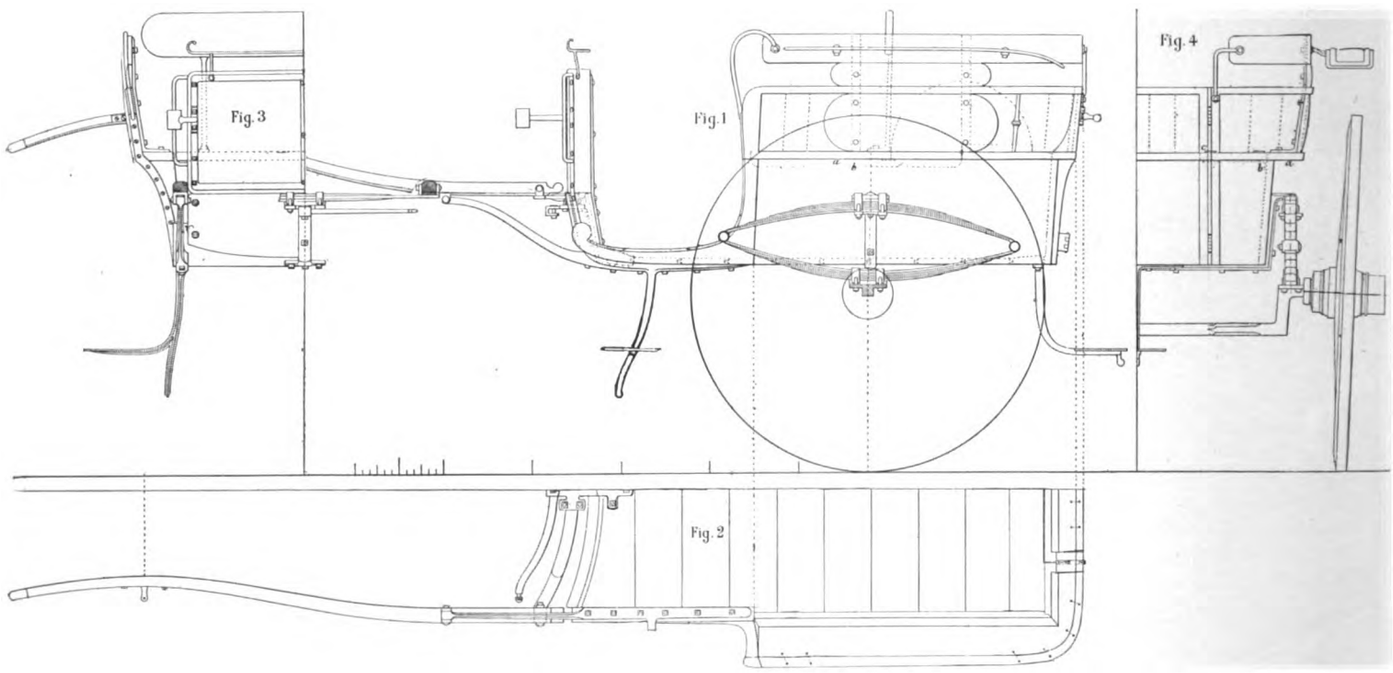
axle, and it is on this outer circle that we fix the horn bar, which will keep the gear correctly balanced, as shown on the drawing. Now the top of the wheel will travel further ahead in a half turn than the point opposite the axle will. As shown on the drawing, the difference is 4 in., as shown from *b* to *g*. Here the trace of the top of the wheel is described from the king bolt and also the axle center, and if after we have locked the wheel beneath the arch of the boot we carry these points up to the side from the plan, until they meet corresponding points drawn horizontally from the side periphery of the tire of wheel, and through these obtained points trace a line, curved, it will be the projection of the tire of the wheel as locked under to near a half turn, and from this we can tell by the opening of the spring whether the jounce of the body will cause it to collide with any part of the wheel, and in any position which it will assume. Here we can see that the clearance is ample to provide for any of the conditions to which the carriage will be used, and if we draw a line parallel to the draw bar H, which will be the locked position of the front axle, until it cuts the line of hind axle, we will have the central point, about which all parts of the carriage must revolve.

origin, it quickly lost its primitive use; grown-up people adopted it, and at present it is chiefly seen in the streets.

"It is a style of carriage which is more convenient to drive than the governess cab, to which it would without doubt have become a worthy substitute, even if fashion had not decreed its acceptance.

"The garden cab is a carriage whose good qualities speak for themselves, while the merits of the governess cart cannot rise higher than the keeping of children under the eye of their governess

"Description—Fig. 1 shows the elevation of the side of carriage Fig. 2 represents a horizontal projection in half view of the carriage reversed. Figs. 2 and 3 are respectively designed to show the front and back views. The measurement of seat (the seating capacity?) is 3 ft. 9 in., of which 20 in. go for the front seat and 25 in. for each of the two back seats. These are the usual dimensions, and such could be easily reduced were it necessary to adapt the carriage to a small horse. With a view of perfect balance the front seat is so constructed that it can be drawn back when the two back seats are unoccupied. For this purpose it slides between the side rails, *a, a*, Fig. 1 and 4, on a strip screwed to the board at the bottom of the side rails. One part of each of the other seats folds back, as is



GARDEN CAB, FROM "LE GUIDE DU CARROSSIER." SCALE ½ IN. TO THE FOOT.

We hang up the rear of the body on three-quarter elliptics and cross spring, so that we can drop the rocker below the bottom sides of the body, and by this means lower the seat frame to the proper height above the floor and the proper height below the head lining, and at the same time take half of the weight off the pump handles, and at the same time employ a 4 ft. 8 in. track. The full elliptic spring would interfere with all of this.

Length of body, 8 ft.; height, 64 in.; width, 52 in.; length of boot, 48 in.; height, 18½ in.; width, 31 in.; width of door, 20½ in.; height of panel, 33½ in.; whole height of door, 58½ in.; size of back top quarter panel, 25 in.; depth of lower panel, 17 in.; height of wheels, 38 and 50 in.; springs, front, 40 in.; back, 44 in.; height, front, 9 in.; back, 10½ in.; width, 1¾ in.; size of axles, 1¼ in.; four 8 in. hubs.

THE GARDEN CAB.

(See Working Drawing.)

THE working drawing herewith is a reduced reproduction of one that appeared in *Le Guide du Carrossier* of July last, and the text herewith contains all the essential features of the description as given in that journal:

"The garden-cab, as its name indicates, was at first a garden or park carriage; but like the governess cart, from which it took its

shown in Fig. 1 on another part fixed on a pivot, thus leaving the front one free to be drawn back as required. A strip of wood about ½ in. wide is screwed under the top strip serves as a support to the mobile part of the two back seats. Even the slightest examination of our sketch will show that the body of a garden cab is one of the simplest to build. The front foot of the body is curved to the height of the top part of the moulding in the manner indicated on Fig. 3. The big projection does not allow of its having the gondola form. The inside part is decorated with balusters, of these two are in front of the narrow side panels, four behind it, and four in the door. Fig. 2 shows the division.

The mud guard and the wings are wood moulded to imitate leather stitching. The former are fixed to the bed by three irons which are placed one at each end and the other in the middle—all three bolted to the crossbar. As for the wings, they are fixed to the back of the seat, in the fashion shown.

This style of carriage is usually drawn by small horses, and as it is the custom to mount it fairly low the diameter of the wheels that we have given is 4 ft. Generally elliptic springs are used, although the three spring mounting presents no difficulty of application in this kind of vehicle, but the advantages of the latter mounting which is more rigid and so preferable for a carriage of this character. Our sketch shows that the springs are already above the center and center of gravity of the load is higher than the point of support of the body. Moreover, the two inconveniences would

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be certainly augmented in the case of a three spring mounting. Again, in using a brake round the hub we avoid the inconvenience of a brake working on the tire of the wheel by making the springs rock. These latter can be fixed to the body in two wings, either as we show in the cut by attaching them to an iron passing under the base, or in bolting them to a sort of a point fixed to the groove of the top. But the first method is preferable, as the load in the carriage is always toward the back. There is not, and never will be any absolute rule for determining the location of the wheels. Experience alone can fix the position of this with regard to the body. The center of gravitation is changed according to whether the back is occupied by one person or two, and in the former case the suspension leaves much to be desired, as the front seat can only be drawn back when the two back ones are unoccupied.—*From Le Guide du Carrossier.*

A NOVEL KING BOLT.

When Mr. Reynolds, proprietor of a livery stable in Suffolk street, New York City, who also made the major portion of the vehicles used in his business, and did all his own repairs, invented the "Clip King Bolt" he was looked upon by the people of the carriage trade as a great genius, and as having produced something grand, something that would last forever. When the writer, some sixteen years later, produced his king bolt with concealed nut, which permitted the employment of the saddle clip on the front spring, it was also considered another great step of advancement in carriage building.

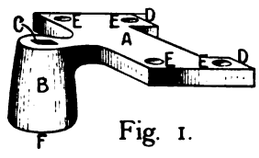


Fig. 1.

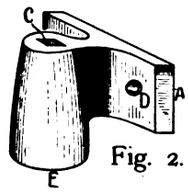


Fig. 2.

Ours is a progressive age. Something real good is invented and applied to-day. It fills the bill all the way through. All of which does not imply that the world's carriage builders and inventors must stop short, lift their oars out of the water and throw them away and trust to one or two inventors to float our "business canoe" on to prosperity without more effort.

The sailing vessels have given way to ocean greyhounds, propelled by steam. Railways have buried canals and stage coaches on the outskirts of civilization, while the telephone says to the telegraph, "You have been a pretty good fellow, we will let you keep on working at night while we sleep."

Since the inventions of Mr. Reynolds and the writer were brought into general use by the carriage and wagon industries of the world, a number of other king bolts have been placed before the trade. Most of them made by specialists—none perhaps but are entitled to more or less merit.

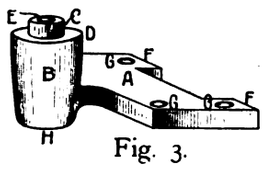


Fig. 3.

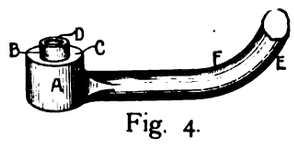


Fig. 4.

The clip king bolt going through the spring with nut on top and the same with nut concealed have their disadvantages. More particularly now that the fifth wheels are above the reaches. The slot fifth wheel, as invented by Henry Scharch, the object of which was to stop the clatter of the circle at the hinder part, has, like the kingbolt, seen its best days, and has about reached the end of its usefulness, and must sooner or later go to the rear and make way for superior inventions and appliances.

In the present invention we not only express a king bolt, but include a king bolt stay and fifth wheel safety clip, all closely related and dependent on each other in order to be generally useful. The combination must necessarily commend its use to all builders of good and fine work.

Fig. 1 shows a clip bar plate on which is a boss for the insertion of the king bolt. A, the clip bar plate, with the boss B solid thereon even with the plate on the upper section and projecting below the plate sufficiently to accommodate the conditions which follow. C shows a square hole for the insertion of a king bolt with square neck and round head, the same as an ordinary carriage bolt. D, lugs or ears on the back of the plate for the holes; E, same as holes E on the front of the plate, one at each side of the boss, "the holes being for the insertion of the bolt section of the spring clips securing the front spring to the head block. F, the base of the boss, it is counter-bored

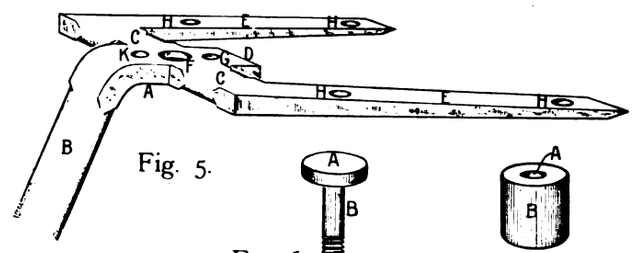


Fig. 5.

Fig. 6.

Fig. 7.

for the purpose as set forth in a future paragraph. The whole is applied to the under side of the head block plate, which is made flat, in order that the clip plate may have a full even bearing thereon. The plate will be best if made of Norway iron, or good mild steel. The boss is to be placed in front of the head block.

Fig. 2, used for the same purpose as Fig. 1, to be used when the front spring is bolted onto the head block. A, the plate with holes D. B, the boss with square hole C, same as Fig. 1. E, the base of the boss, and the same as F, Fig. 1. The plate is secured to the head block by means of bolts passing through the holes D. This plate may be made of any ordinary good iron, or if many are to be used, of either malleable cast steel or malleable cast iron.

Fig. 3 shows the bottom or lower clip bar plate, the plate to be secured to the under side of the axle, the boss in front. A, the clip bar plate, furnished with the lugs F, which are fitted with holes G, same as the holes G, on front of plate, the same holes being for the purpose of securing the plate to the under side of the front axle, by means of the bolt ends of two clips encircling the axle bed and axle

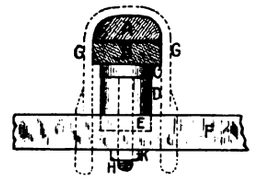


Fig. 8.

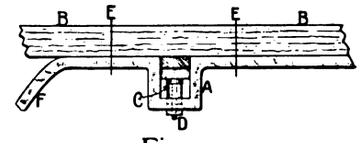


Fig. 9.

stack, passing through the holes G. B, the boss of which, D, is a shoulder, and C, a reduced section having in the same the round hole E. H, the base of the boss which is counter-bored, the same as F, Fig. 1. The reduced part of the boss, marked C, is for insertion in the counter-bore at the base of B, Fig. 1, and marked F, which forms a safe shackle lock, when the whole is complete. This plate will be best made of Norway iron or good mild steel.

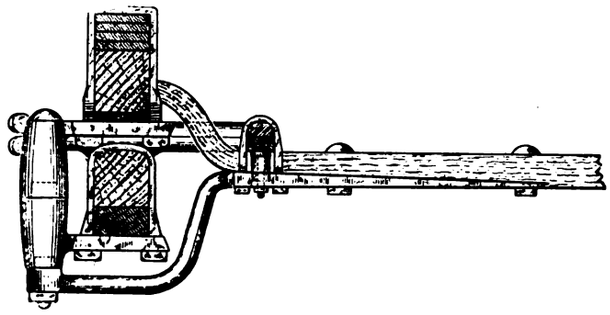
Make the thickness of top and bottom plate equal, to suit the straining capacity of the securing clips. No lugs are placed in the front, from the fact that the iron which would be removed in making them is necessary to preserve all the strength possible for the boss on each one. It at the same time also saves some little labor in the forging and finishing. No particular sizes are given, from the fact that the smith must be governed in the matter by the size and class of the work and presumed carrying capacity.

Fig. 4 shows the lower section of the king bolt stay. A, the lower part with collar B, and reduced projection C, in which is the round hole D. E, a section of the stay. The reduced part C, is to fit in the counter-bore of B, Fig. 3, at its base H; the hole D is for the passage of the king bolt after passing through B, Fig. 1, and B, Fig. 2. In making the head or boss of this stay care must be taken so that at F, Fig. 4, there is room enough to clear the securing nuts of Fig. 3, when secured to the front axle.

Fig. 5 shows the back section of the kingbolt stay in all its particulars and surroundings. A, the horizontal center section. B, that section which is welded to E, Fig. 4, to make the stay complete. C, the side arms extending to the under side of the perch or reach on each side of A, and carrying the feet E, which secure the under side

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of the reach and furnished with the holes H, for securing to reach. D, a projecting lug or ear furnished with the hole G, another hole marked K, in that part marked A. These holes are to pass the bolt ends of a clip through, having for its purpose the prevention of the clattering of the fifth wheel at that point. The hole F is for the insertion of a piece of rubber tubing, which is to serve as a compress on the under side of the lower half of fifth wheel. This hole is to be three-fourths of the thickness of the iron, just large enough for the close insertion of the rubber tube. The remainder of the distance just large enough for the passage of the bolt part of the compress bolt. The lug or ear D is just wide enough to suit the clip nut. The front section of the stay from C, also the arms C, require to be fairly heavy, as the weight of the draft of the vehicle is centered chiefly on

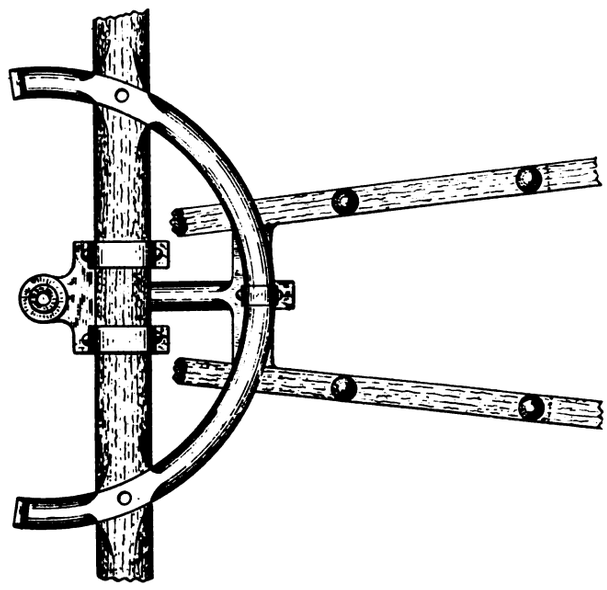


SIDE VIEW. PARTS ASSEMBLED.

the kingbolt stay throughout. The illustrations represent a flat stay because of its being stronger, and suits all purposes quite as well as if round. Another fact that the stay cannot be readily seen without stooping still further voids the necessity of any other shape than flat. The parts A and D must be flat at all hazards. We would further suggest that all of Fig. 5 be made out of "the solid" and of Norway iron. If desirable, the parts C, Fig. 5, and the parts B, Fig. 5, and E, Fig. 4, may be swaged to a flat oval with full flat edges.

Make C, of Fig. 5, straight, which will carry E far enough back of the fifth wheel to secure the same to the perches. The circle of the fifth wheel will be distant enough then for proper securing to the reaches.

Fig. 6 shows the compress bolt. A, the head; B, the bolt section, with the thread. The use of this bolt is as follows: The rubber tube or compress rubber is placed in the hole F, Fig. 5, and made sufficiently long that a compress may be made by means of the compress



PLAN VIEW. PARTS ASSEMBLED.

bolt, at its head, against the under side of the lower half of the fifth wheel, sufficient to keep it at all times pressed against such part of the lower section of the fifth wheel and thus prevent any clatter. Releasing the nut of the compress bolt, in the event of wear on the fifth wheel, permits of taking up such loss of metal and constantly shuts off "clatter."

Fig. 7 shows the rubber tube. B, the tube for insertion in hole F, Fig. 5. A, the hole for the passage of the bolt part of the compress bolt. Fig. 8 shows a cross section of fifth wheel, kingbolt stay, compress bolt and nut and compress rubber. A, upper or half round section of fifth wheel. B, lower or flat section of fifth wheel. C, head of compress bolt. D, section of compress rubber above kingbolt stay. E, the insertion of the same in the counter-bored part of the kingbolt stay. F, section of the kingbolt stay. K, nut of compress bolt. H, outer end of compress bolt. Dotted lines G, show line of the clip as encircling the whole and passing through the kingbolt stay, giving as a whole result the holding of the lower section of the fifth wheel as firmly as if the same were secured by bolts.

As a net result the reduced boss of Fig. 3 inserts in sockets in the counter-bored base of the boss of Fig. 1, at F. Then again the reduced boss of the front end of the kingbolt stay, Fig. 5, sockets or inserts into the base of the boss B, Fig. 3, at H, completely shackling or locking the whole so firmly together that a bolt five-sixteenths of one inch in diameter would furnish the locking sufficiently for a wagon calculated to carry 2,000 pounds.

For an ordinary wagon, say 300 pounds, we would suggest a bolt three-eighths of an inch in diameter. Increase the size of the king bolt as the size of the wagon increases. This king bolt may be employed on any vehicle such as business wagon, etc., with perfect safety. It will be of value to occasionally loosen the nut of the king bolt and apply a little good oil at each socket.

When applying this king bolt to a single reach make the king bolt stay at fifth wheel as sketched in outline Fig. 9. A, bottom section of stay under the fifth wheel. B, parts resting on bottom of reach on perch. E, securing bolts. F, front section of stay. C, recess for fifth wheel. D, compress bolt, which with tube arrange same as when applied on vehicles with two perches or reaches.

PHYSICIAN'S STANHOPE PHAETON.

THE illustrations show desirable points in a design for trimming a stanhope phaeton suitable for a physician. Fig. 1 illustrates a neat design for tufting the spring back. It may not be anything particu-

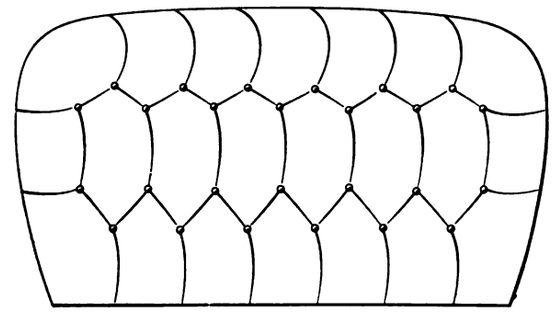


FIG. 1. DESIGN FOR BACK.

larly new, but when the design is properly worked up the back has a pleasing appearance.

Space off the rough lining for the back for rolls six inches in length. The lower points 3½ inches in length, the upper points only 1¼ in. in length. The space for the head roll at the top of the back ought to be at least 5 in. wide, the space below the lower point tufts to the bottom of the back, say, 6 or 7 in., the object being to shorten the space of the rolls between the two rows of points. The width of the back panel governs very much the spacing of the tuft lines, if the spaces are to be in proper proportion to the height of the back.

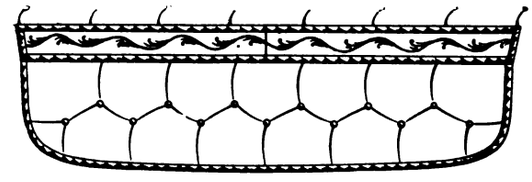


FIG. 2. CUSHION FRONT AND SKIRT.

The back is very plain and it is easy to produce it on the rough lining. In giving the fullness to the material, whether leather or cloth, allow ⅞ in. in the width of the rolls, ¼ in. fullness in the length of both upper and lower points, ⅜ in. in the length of the rolls between

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the points. Fold the material along the tuft lines, on the wrong side, and stitch near the edge of the fold on the machine.

Fig. 2 represents the cushion front, which has broad lace, and also the design for tufting the seat valance. Make the valance on a stiff rough lining, and extend it from the top of the seat board, down to 7 or 8 inches in width, the lower corners of the rough lining to be well rounded off. The spaces between the tufts are to be of the same width as the spaces of the back (6 in.), the length of the points 1¼ in. In laying off the material for the valance allow ¼ in. fullness each way between the tufts, fold the goods along the tuft lines on the wrong side and stitch near the edge of the fold on the machine. Finish the edge of the valance with pasting lace. Fig. 3 illustrates the style for the side quarter panels, and the inside of the top. Tuft the side quarters in diamond form, and finish the top of the squab with a plain roll. Give ¾ in. fullness to the material in the diamond between the tufts each way. The bows of the top to have a stretch of 50 in., the drop on the back bow 5 in., the drop on the front bow 7 in., back bow over panel 2¼ in., from the back corner of the quarter panel to the bow prop iron, 23 in. The most particular point about the top is the kind of block or frame most suitable to hold the side light, no matter if the stanhope is a horseless or a horse vehicle, the doctor must have a side light in the top, and he wants to interfere as little as possible with the close crushing of the top, therefore the block or frame must be made with that idea in view. The side light noted in the sketch suggests a good plan for the purpose. The glass on the outside of the block to be 1¼ in. wide and 2½ in. in length; rabbet the frame out 5/16 in., which will require the glass to be 1⅞ in. scant in width, and ⅜ in. scant in length. The glass ought to show a bevel of ¼ in. on the outside of the frame. Rabbet out the bow which the block is fastened to the length of the glass, and make it to act as a part of the frame. Before the block is fastened to the bow the out corners must be well rounded off in order that the block will not chafe the leather when the top is crushed. Neatly round the outside of the block and the edges around the glass so the leather can be

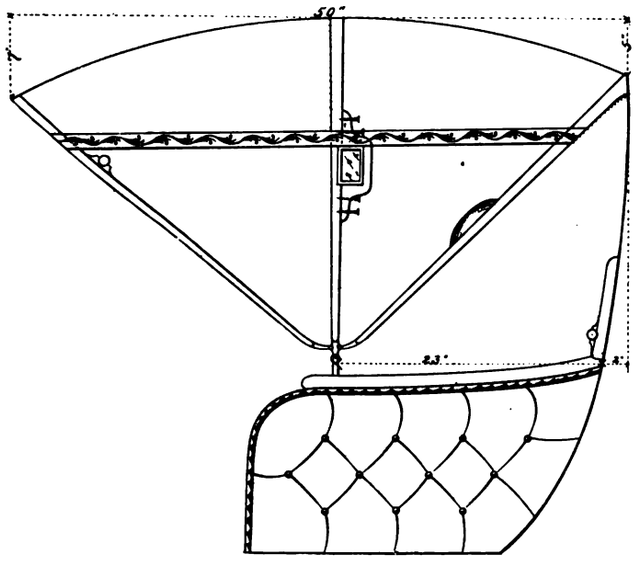


FIG. 3. QUARTER AND TOP.

neatly turned over on the inside of the groove. Glue the block to the bow and fasten with two suitable screws at each end of the block; cement the glass to the side of the groove against the leather. Fnish the groove on the inside with wood moulding covered with the head lining goods. Place a small pad on the back bow for the block to rest aganist when the top is crushed. Divide the side of the head lining with broad lace stretched from bow to bow on a spiral line, the lace at the top of the glass frame groove. Stitch each edge of the lace to the head lining with needle and silk thread. The broad lace has a pleasing effect on a stanhope head lining.

ROOF LINING FOR CANOPY TOP.

FIG. 1. illustrates a neat and attractive design for the roof lining for canopy top. To make and put the roof lining in is a simple piece, and is easily done, as the following remarks will demonstrate. Make the roof bands in two parts, and join them together at the center block. Cut the cloth for the bands 3 inches wide, crosswise of the cloth. This is done to give the bands a different shade from the roof lining. Apply paste over the 3 inch surface, fold the cloth with the edges joined along the center; press the cloth nicely down with a smooth face flat-iron, and repeat the pressing in an hour or so. Place a block at the center of the roof large enough to cover the center piece. Put the head lining in with pointed tacks, one or two at each

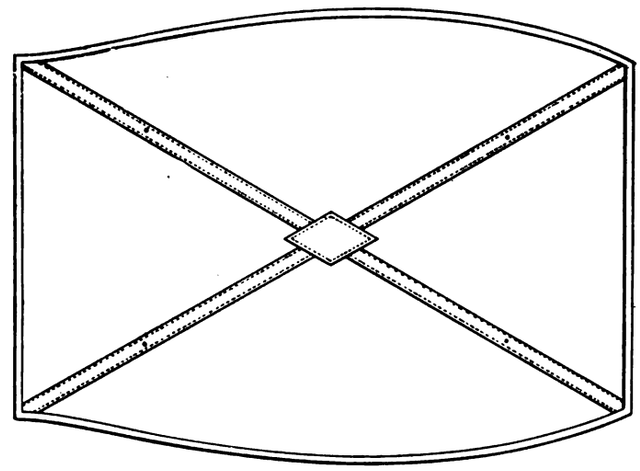


FIG. I. ROOF LINING FOR CANOPY TOP.

corner, and a few along the ends and side rails. Give the proper draw to the cloth from the corners. Snap a chalk line from the corners, to denote the place and width of the bands. Make a crease along the edge of the bands for the stitching. Apply paste over the surface of the band, but not too close to the edges. Lay each piece on the head lining, between the chalk lines, and carefully press down onto the cloth. The bands must not be strained at this part of the work. The lining has to remain in this stage until the paste dries. Then take to stitch smoothly on the machine. Care must be used to have the nap of the cloth on the bands right and left, or to face each other. If this is not observed it will appear as if two shades of cloth were used. Cover the eve rails with cloth or thin canvas, nail the head lining, and fringe to the inside of the rails.

To put in the lining bands, first tack them to the center block, and then draw to the corners where they can be properly adjusted. It is then an easy matter to finish the other parts of the work. The center piece can be made attractive in several ways, but the one noted in the sketch is made with a piece of grain dash leather dampened and well slicked out. The diamond is formed 4 in. by 6 in. The diamond is re-enforced with a piece of thick top leather, cut 5-16 in. scant. Then select a thin piece of the body leather to cover the diamond. Apply paste over the surface of the cover, and crease it down along the edge of the re-enforced piece. Turn the cover over the edges and paste down on the back of the diamond. When dry stitch it and secure it in place with 6 oz. lace tacks, one in each corner of the diamond.

SOME POINTS ABOUT PAINTING.

WHILE good taste calls for a judicious selection of colors, so as to avoid tawdriness, there is no good reason for the close adherence to dark colors on all kinds of carriages alike, regardless of their forms, features and uses. Neither are there any good reasons why one style should be adhered to.

The sidebar square box buggy and road wagon is more arbitrary in style than any other. One pronounced feature of this is the side bars, these forming the main supports for the hanging of the body are necessarily conspicuous, but the painter makes them the more so because of his custom of painting them the same color as that of the wheels, axles, etc. When these are in dark colors this method of painting is not objectionable, but when the gears are painted any one of the brilliant reds used at the present time, or light colors such as orange or lemon yellow, light cream or light green, and the body black, these bars become the most conspicuous feature, and as the vehicle moves along the street this streak of red, yellow, etc., cuts the line of the body and gives to the under line the appearance of being arched and destroys the harmony of outline entirely. If the side bars were painted the same color as the body this objectionable

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line would not be visible and the other parts of the gear would show to a good advantage. If the side bars were absolutely straight on the top line the line of color would be less objectionable, as it would not break the line of the body, but would simply serve to give the panel the appearance of being narrower than it is; but as it is, the arched line is unartistic and detracts materially from the harmony of outline of the body. The Hub favors the painting of the side bars the same color as the body regardless as to what color is used on wheels, axles and springs. Then, too, we oppose the mottled shaft. We would paint all forward of the cross bar black if the body color is black, or we would do away with the black leather trimmings on the shafts, and leave it of one color throughout.

Another matter that might well receive attention is the painting of the inside of the body. By universal consent the inside of bodies, like the runabout and other square box patterns, where they are covered with a dark panel, are painted the same color as the outside of the panel. We saw a break in this connection a few days since. It consisted in painting the inside of the body a red the same as the gear color, the red extending up to within an inch of the top edge of the panel. The plain seat risers were also painted red. This last feature we do not specially admire, but it does not detract from the general appearance of the body. The seat was a flat spindle, the inside of these being painted red, the outside and edges black. This slight show of color was pleasing and added much to the appearance of this vehicle. In making use of these colors on bodies the painter must use good judgment or he will overdo and spoil the appearance.

PAINTING AND FINISHING RUNNING PARTS.

Why consider the painting of wheels and running parts as secondary to the painting of the bodies? Ordinarily a great effort is made to get the carriage body early into rough stuff to give it adequate time for drying, but the running parts—why, bless you, the convenience of the painter can be exercised in painting them. It is a standing joke in the paint shop that the running parts can, if necessary, be brought from the lead foundation up to a finish in forty-eight hours. It is this sort of painting that has brought a large share of factory painting into almost nation disrepute.

The body surfaces too often show an incomparable finish while the running parts illustrate an inferior quality of surfacing. Moreover, in the actual test furnished in daily service the body surface, as a rule, wears durably, whereas the running parts wear exactly the reverse. Why uncomplainingly permit this glaring lack of uniformity to continue?

The gentleman who strolls abroad attired in an immaculate suit wearing an unpolished shoe, or a hat showing the grim touch of a prolonged service, will be promptly voted an unpardonable offender. Why discountenance the one condition and assent to the other?

Uniformity of painting, harmony of finish, is the sure mark of the skillfully painted vehicle. Lack of this has done much to discredit the reputation of the factory carriage. An abbreviated time limit for painting the modern carriage, as contrasted to the time limit formerly in vogue, has for some years been a necessity. But the abbreviation has been a little too brief as applied to vehicle running parts. The day has come—has been here for some time, in fact—when the painting of wheels and running parts should be done in a way to fitly correspond to the remaining part of the vehicle.

First class painting of running parts require a good outfit of labor saving devices upon which to handle the work; it requires high class tools, clean quarters and favoring conditions generally. The limitations of time have developed and nourished the manufacture of quick primers, quick lead coats, and turpentine flooded color coats, these to be dressed over with rapid, hard drying varnish coats.

Elasticity is an element entirely foreign to the painting as above stated. Hence the flaky, shelly, devitalized structure goes early to decay. To gain the desired time it becomes necessary to strike out the elastic materials in favor of the "quick and the dead" substances. The vehicle consumer pays the penalty when he puts the "rapid fire" painted job into service, and eventually the perished painting returns to plague the painter. The fine art of carriage painting is worthy of a better memorial than the oft recurring example of paint and varnish tumbling to decay by virtue of defective workmanship and processes.

Back to the priming coat is the call that must count in the reform movement making for a better grade of gear painting and finishing. White lead and raw linseed oil have fairly been scolded out of the paint shop as priming materials. Nevertheless, they are to-day regarded by a majority of carriage painters as an invincible combination in the economy of the best carriage painting. For example, use white (keg) lead, 2 parts; French yellow ochre ground, impalpably fine, 1 part; raw linseed oil, 4 parts; turpentine, 1 part; coach japan, 1 tablespoonful to a quart of the primer. This will produce a primer that will dry about as fast as the ordinary, widely heralded, so-called quick primer. It will penetrate the pores of the wood; it is tenacious; it will hold fast; it has the needed elasticity; it has the right sort of surfacing property. Upon the final analysis, it yields by far the most desirable all 'round results.

What of the lead to follow this? Use white keg lead, colored slightly in the direction of the ultimate color and thin out to the proper consistency with, say, three parts raw linseed oil, five parts turpentine.

The next lead coat is practically the final leveler of the surface—a "dead" lead coat, that is, drying without a perceptible lustre. Apply dead lead with a camel's hair brush. Make it of white (keg) lead thinned out to the brush with turpentine; add, as a binder, 1 tablespoonful of raw linseed to 1½ pints of the lead, and to 2 parts of oil add 1 part coach japan.

A first class putty is requisite in the painting of running parts. You can no more build durable paint structures with inferior putty than you can buy good lead with a dishonest coin. Such a putty is made of dry white lead, 2 parts; white (keg) lead, 1 part. Mix to proper consistency in rubbing varnish and coach japan, equal parts.

A putty for running parts—for any part of the vehicle, rather—should be well kneaded and worked out. This develops the smooth, fine texture so necessary in putty to be closely surfaced upon. Continued hammering of putty makes it tough and leathery, and prolongs the sandpapering.

As a matter of economy, not to mention the physical comfort of the painter, smooth puttying should prevail in the painting of running parts. Lumps of putty defy the painter's strength and ingenuity to an expensive degree sometimes.

The square oval and beveled point putty knife are alike useful—even indispensable—in working over gear surfaces. Aim to apply putty smooth, and, so far as possible, sparingly. It takes a little longer to so use it, but this extra time is more than overcome in the time gained in sanding; and the ease of sanding, too—think of that. Plenty of rub lead is now being worked in nearly all classes of paint shops. Rub lead is an important part of the system of painting running parts.

Rub lead furnishes a fine, velvety surface; compact and dense in texture. It gives the painter more than the shadow of a substance to surface upon. It's chief disadvantage, however, is found in the manifest slow drying property. At least forty-eight hours must intervene after application before rub lead can be safely surfaced upon or re-coated.

Knifing lead offers an advantage over rub lead in that it can be surfaced upon twenty-four hours after application. Ordinary quick carriage putty thinned out to the desired consistency yields a reliable knifing lead.

Priming and all lead coats should be well laid on the surface, and brushed out clean and smooth. Good priming and leading means brushing the pigment fully into the grain of the wood.

Sandpapering is work that has largely to do with well finished running parts, and the bulk of the sandpapering should be done upon the wood before and after the application of the priming coat. If the surface is carefully sanded down before priming it will be an easy task to fit it for the lead coats after the priming dries. If the first sandpapering be neglected then must ensue a proportionate stripping down of the surfacing pigments.

All lead coats above the priming coat should have the maixmum body left to hold out the color and the varnish coats. Lead coats are not—at any rate, were not originally—intended for sandpaper coats, pure and simple. Incidentally they are to serve for sandpapering purposes, but mainly they are to fill and level up and furnish a strong body of pigment for the finish to follow.

If the surface is first sandpapered right and rendered sleek and smooth prior to priming, it will not require much sanding between coats to keep it fine and free from defects. An injunction meet to be proclaimed from the housetops forbids sanding the sharp edges of wheels and running parts. A rasp or two and such parts are bare and weak, and so remain. And in service, please note that the edges first peel and flake.

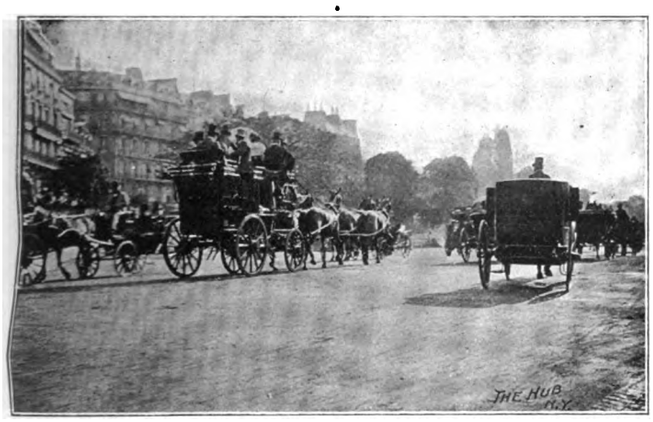
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The final lead coat, provided the surface has been brought up in the proper order of its being, should not require the touch of sandpaper. A rub over with hair or moss will suffice to remove all atoms of matter. Then a thorough dusting off and the work is ready for color.

Presently comes the application of color and varnish. In due time moss the gloss off this coat, or, in case of best work, rub lightly with water and pumice stone. Touch up and stripe. Then flow a clear rubbing varnish coat over all. On this coat rub to a faultless surface. Next make everything clean, and then finish. Give all coats plenty of time to dry. Keep clean and use the best skill and materials. Behold, the work must wear; it has the right to wear.

PARIS CARRIAGE FASHIONS.

As much by reason of the fine weather as for any other particular attraction in the French capital, the world on wheels has been very brilliant this year, and the coaching meets both at the Place de la Concorde and at the Arc de Triomphe were very numerously at-



DOWN THE AVENUE DU BOIS.

tended up to the time of the Grand Prix de Longchamps, and even beyond that conventional event for the break-up of the Paris season, stylish carriages were, this year, very slow at disappearing, although by the first week in July all the most striking of the equipages of the month previous had vanished for the duration of the interval preceding November.

The "world" that did not quit Paris at all was that which is devoted to horseless carriages, and that peculiar section of society which appears to have been born with the automobile, remained behind during July and even later, swelling the long files of second class and hired carriages which, with their burdens of foreigners and tourists, wedding parties and faded folks, make the daily promenade down the broad avenue to the ever attractive Bois-de-Boulogne. Could many of these visitors to the "Ville de Lumière" in these autumn months learn that Paris wears a very different look before the middle of June, only then would they understand the vast difference that is effected on the whole appearance of a city, so much under the domination of fashion, for, though the houses and trees remain, the street life is gone. The "trees?" It is true the trees are there with a foliage of December leaves which never, this season, wore the "rich red tints of autumn," being prematurely burnt up with an ardent sun, assisted by long periods of drought, against which all the watering arrangements of Paris were useless, while southwards a hundred miles or so, France still displays an almost Hibernian verdure.

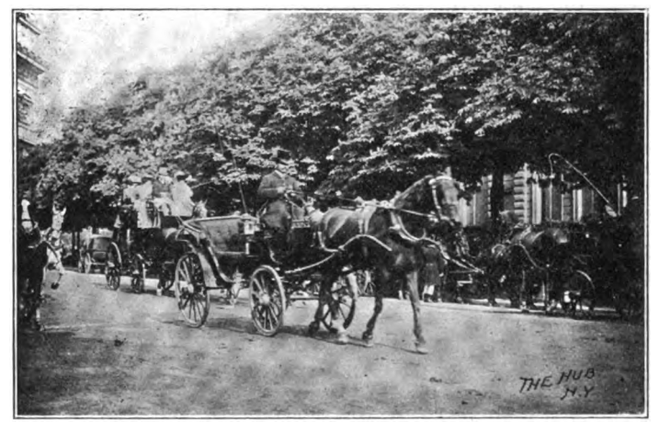
To come back to blackboard and bench, it is refreshing to find indications in the carriage world that the era of the ponderous curved pattern in carriages is waning. A visitor to Paris at this moment would see little else than curved rockers and bent panels, but in the height of the season the examples of straight lines, conveying to the student an impression of dashing smartness, keen alertness, devoid of many square feet of useless panel, indicate a transition period within the near future. In any other capital than Paris it might be asked what could there be in a straight line to make it of superior elegance to a curved one? Did not a curved line suggest something Louis Fifteenified, something romantic, lifting the carriage rider far beyond the practical commonplace and quite disassociated with necessity and dollars?

Moreover, had not the curved line been baptized in Paris, and to unflinchingly copy Paris styles even though those styles had already been changed a few years before, was not that the "correct thing" to do? How refined, too, one felt in following something foreign, provided it was French, to have our menus written in a language that would puzzle a Frenchman to explain and call a boiled dumpling "Boute de farine à la Marie Antoinette," or to quote some French phrase from a dictionary or home society paper, innocently oblivious of the fact that the expression was five decades stale and that one decade of time was sufficient to render antique both language and styles!

Thus, in Paris, curved lines—Louis XV. if one likes—have been wrung threadbare, and every conceivable radius has been tried and discarded, to be brought in again, and if there now be any superior elegance in a straight line or in the "Renaissance," it can only be that of uncommonness under the existing local conditions, while there is yet another fact, only appreciated locally, in this that the aristocratic round line vehicle of deep tub-like proportions which was common seven years ago is to-day the especially favored carriage of the "dames galantes," and now what the French approvingly term, "snobisme," insists, therefore, upon a salutary change.

But, again, a change means an approach to the omnipresent lines of the hideous Paris hack cab, which, as becomes an every day necessity, boasts of no more panel than is needed for the safety of its occupants, being as near an approach to a chair or chaise on wheels as it has been possible to make it, while comfort is at all times nil. Here, then, is the dilemma for Paris fashionables. To leave no doubt in the minds of our readers as to what is meant by curved lines, particularly for Victorias, we give a few thumb-nail sketches showing current styles and also one to indicate the form of the Paris hire cab or "sapin" with its Victoria body.

Allusion has been made previously to new carriages with angular lines; these are not shown. They comprise coupés and Victorias in particular; such vehicles as broughams, landaus and phaetons seldom, if ever, going to an extreme in curved lines as with the two first named carriages, and in which a change to straight lines is distinctly remarkable for Paris. Besides straight rockers and seat bottom sides the coupés had roofs almost flat—so flat as to reveal no sphericity to the unaided eye and producing a very handsome effect. It should be needless to say that the windows were of the very largest possible and the glass rail was very low and narrow. The back, top and lower quarter panels were outlined at the elbow with an almost invisible beading, and the external finish, including the painting, was of the most severely sober description. Similarly, with the same vis-a-vis Victoria bodies, the angular lines were accentuated to the utmost by the mud wings, being extended upward from the step to a considerable height. A lengthening of the mud



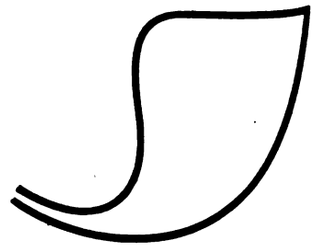
STARTING FROM THE ARC DE TRIOMPHE.

wings is noticeable with many forms of carriages, and this elongation is undoubtedly the result of the superior mud throwing capacities of pneumatic or rubber tires. Last winter it was amusing to notice the makeshift extensions attached by hack drivers to their mud wings and which imitated automobiles in dragging the road behind their front wheels.

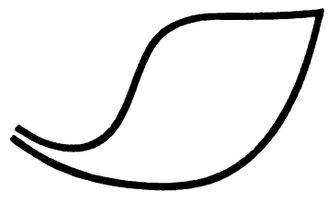
From the rough outline sketches intended to indicate the existing

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forms of Victoria bodies it will be seen that there is a return to the direction of the Paris styles of 1886—a period of shallow curved



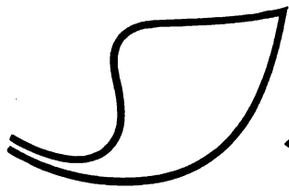
THE MONSTROSITY 1895.



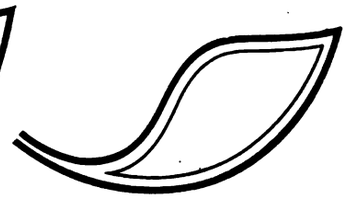
VERY COMMON STYLE 1900.

lines and also of a combination of angular and curved lines, or a time when the small fashionable Victoria (Petit Duc Victoria) was the exact model from which the public cab of Paris has never varied to this day.

Notwithstanding this reaction, there remains considerable differ-

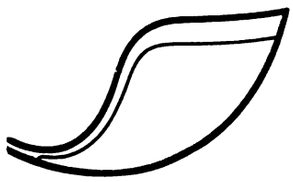


FANCIFUL VARIATIONS.

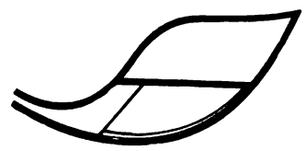


TRANSITION STYLE.

ence between the contours of carriages of fifteen years ago and of to-day, especially in the Victoria. The reclining hind pillars of the former allowed only of a shallow panel, while to-day the abnormally high back panel of 1895, cumbersome and ungraceful to an extreme,

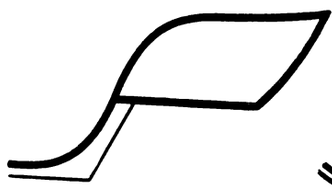


FASHIONABLE.

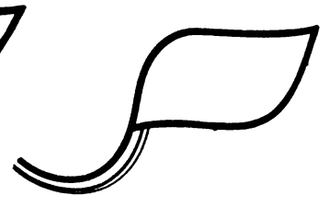


REVIVAL.

has been cut down to a height sufficient for every comfort, with the rider, without looking like a cornucopia mounted vertically on wheels (or species of sulky hutch), and without hiding the rider's head, as in the latter. The shallow canoe form of body shows a returning



VICTORIA, HACK BODY.



NEW STYLE.

vogue in such styles of carriages as the landau, the Victoria, park phaeton, and the mail coach, and both the shallow curve and the straight line are sufficient indication of a growing weariness with tub-like carriages.

CARRIAGES THAT ARE VALUABLE.

THE most dazzling carriage in the world as well as the most valuable is at the palace known as the Trianon, at Versailles. The gorgeous vehicle was constructed for King Charles X. of France, and was first used by him on the occasion of his coronation. It is almost covered with gold and cost somewhere in the neighborhood of $200,000.

The next most costly carriage * is owned by her youthful majesty the Queen of the Netherlands. Exceedingly handsome, this royal coach is decorated in the style of the Dutch renaissance, and the interior is luxuriously upholstered in embroidered cream-colored silk. It was a present to Wilhelmina from the loyal inhabitants of Amsterdam, and it cost nearly $100,000.

The distinguished Indian potentate, the Maharajah of Patiala, has a carriage worth a considerable fortune. It was placed at the service of the Viceroy on the occasion of his visit to the Maharajah's dominions. This remarkable vehicle is made of plate silver, with the State arms wrought in gold. Its value is upward of $60,000.

King Edward's State carriage is worthy of a more definite description. It was made for George III., nearly a century and a half ago, from the design of Sir William Chambers, the distinguished architect. It weighs no less than four tons. The panels were painted by Cipriani, the door panel being embellished with the royal arms in true heraldic colors. On each side panel appears the collar of the Order of the Garter, with the figure of St. George and the dragon. A little upright gilt ornament, in the design of which the rose, thistle and shamrock are introduced, runs round the roof, on which are represented the crown and sceptre. The hammercloth is in scarlet, with heavy gold fringe and tassels. A center panel of dark blue velvet bears the royal arms in gilt relief. The carriage is over 12 feet high, 8 feet 4 inches broad, and the rear wheels over 6 feet in diamter. It contains a large amount of glass, and $35,000 was expended in its construction.

The Czar of Russia possesses several costly carriages, which were used at the time of his imposing coronation. Perhaps the most notable is one which is elaborately painted and carved. The panels were the work of the celebrated artist Watteau, while the carving on the wheels and under-carriage could scarcely be surpassed. This carriage is said to have cost upward of $25,000.

The splendid golden chariot of ex-King Theebaw was actually sold in London three or four years ago for a mere $60. It was subsequently used for advertising purposes, which shows to what base uses even a royal vehicle may descend. The carriage is surmounted by a golden umbrella, and is of modern European design, the driver occupying a kind of golden pedestal in front. Its original cost was over $10,000.

It would be interesting to know what has become of the extremely gorgeous carriage which President Kruger used first at the time of his election three years ago. This extraordinary vehicle was sent to the Transvaal in pieces, packed in hermetically sealed tin cases with outer coverings of wood. It was put together at Johannesburg, and exhibited there before being sent on to Pretoria. It is painted in a royal blue, picked out with vermilion and double fine lines of white and green, the state colors of the late South African republic. The hammercloth is in sky-blue, and trimmed with laces in red, white, blue and green. Inside the carriage is lined with sky-blue satin, with silk laces and velvet pile carpets to match. On each door and on the front and rear panels are emblazoned the arms of the late republic, while a soaring eagle of liberty is painted on the side quarter panels. At the top corners of the roof solid silver soaring eagles are fixed, eagles also forming the crowning ornaments of the lamps.

Each side of the hammercloth has a solid silver impression, the fittings are of silver, and the body of the carriage is finished off with heavy silver beading and ornaments. At the back there is a standard for footment. This gorgeous turnout cannot have cost less than $10,000.

A short time ago the old fashioned two-wheel pony chaise, in which the late Lord and Lady Beaconsfield used to take their country drive together, was sold by auction for $7.05.—*New York Times.*

* This carriage was illustrated in the December, 1888, issue of THE HUB.—Editor.

FREIGHT RATES ON VEHICLES.

THE Texas State Commission has ordered that the following rulings be adopted as "exceptions" to Western classification, to govern in the transportation, by railroads, between points in Texas, of articles named:

1. Passenger vehicles, knocked down, and crated, actual weight less than carloads, first class.
2. Passenger vehicles, knocked down (wheels and shafts or poles detached and tops removed or knocked down sufficiently to be loaded in a stock or box car), actual weight, less than carloads, one-half cent per 100 pounds per mile, with minimum of 30 cents per 100 pounds for each line.
3. Passenger vehicles, set up and too large to be loaded in stock or box cars, minimum weight 5,000 pounds for each vehicle, first class.
4. Passenger vehicles, set up or knocked down, loaded in box cars, carloads, minimum weight 10,000 pounds, third class.

Note.—When new vehicles are shipped as provided in items 2 and 3 above, the same shall be covered with cloth.

This order shall take effect October 10, 1901: cancelling item 2 of circular No. 1386 issued by this commission July 2, 1901.

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THE DESIGN OF ECONOMIC STREETS AND PAVEMENTS.

HALBERT POWERS GILLETTE.

"THERE seems to be a well settled conviction among engineers that by survival of the fittest, a few certain classes of pavements have become standard, and that but litle remains for the engineer to do but to select the particular standard design best fitting the traffic and the purse of the taxpayer. In other words, the design of the pavement no longer seems to require inventive ability on the part of the engineer. I am, however, convinced that there is a great deal yet to require inventive genius in the truly economic design of so apparently simple a structure as a street or road.

"The three functions of a pavement in the order of their importance are: (1) To distribute the concentrated wheel load over a sufficient area of subsoil; (2) to act as a roof, keeping subsoil dry; (3) to furnish a smooth surface, reducing rolling friction.

"Wet clayey soil has a much less supporting power per square inch than dry, which makes the second function above given of great importance. Of wet sand the same cannot be said, for were it possible to keep a sandy subsoil merely damp it would support a greater load and therefore be preferable to dry.

"Whether the soil be clay or sand, however, it is absolutely necessary to provide a pavement of sufficient thickness to reduce the concentrated wheel load to such a pressure per square inch that the soil will sustain it without appreciable settlement. The necessary thickness obviously varies with the character of the soil and its degree of moisture.

"Where a mass of loose fragments, such as broken stone, is spread upon a soil, it is evident, theoretically, that the smaller the fragments the greater will be the area of subsoil over which a concentrated wheel load will be distributed. Experiment confirms this conclusion. Therefore, where a macadam road is built over sand, the smaller the stone in the lower course of macadam, the better, for less stone will be forced down into subgrade by the steam roller. It is during construction that much may be saved by bearing the above stated fact in mind.

"If, as we have seen, the prime function of a pavement is to distribute pressure, the question very naturally arises whether it may not be well to use as cheap a foundation material as possible to accomplish this purpose, and reserve the more expensive material to form a thin wearing coat that will also serve to shed water. This is in fact now done, but not to the extent that it should be; for we find many cities invariably using six to eight inches of concrete for foundations where a layer of broken stone, slag, cinders or gravel would form a much cheaper and better foundation. If found desirable, such a foundation might be covered with two to four inches of concrete.

"Whenever a granular mass is used for the foundation of a pavement, it is desirable to have all the voids filled, in order to entirely prevent movement of the fragments under the jarring of passing loads. If the fragments are angular and well compacted, there is less need to filling the voids, but if the fragments are round it is imperative.

"Sand alone has often been used as a foundation for brick and other pavements, but frequently with very unsatisfactory results on account of uneven settlement. Sand can, however, be made quite as unyielding as gravel simply by filling the voids with fine dust. For this purpose it would be well if cities, especially those in the Middle West, would secure pulverizing mills and grind about one-third of the sand used to powder, then mix with the coarser sand and puddle well in forming a foundation. No rolling is necessary. Water, if supplied in abundance, will puddle sand that contains sufficient fine dust, until it is almost as hard and unyielding as concrete. Engineers who have seen the adamantine consistency of quicksand after it has dried out will bear witness to the statement just made. It is evident that on a sand subsoil if fine dust be spread and washed in, the supporting power of the soil will be so greatly improved that a very thin foundation will suffice.

"In discussing economic pavement design, we have thus far dwelt upon the foundation and subsoil; we may now consider briefly the wearing coat. Wood and stone block pavements are gradually but surely falling behind in the race for supremacy; wood because it is, in the long run, not so cheap as brick; stone because it is more expensive than asphalt, and scarcely more durable where the traffic is great. The noise caused by a stone block pavement is alone a good enough reason for its rejection, even where the cost of maintenance is less than asphalt.

"Vitrified brick, if laid flatwise, is almost as cheap in first cost as cedar block, and when this is realized I look to see such cities as Detroit entirely discontinue the building of wooden pavements. Brick are as yet always laid edgewise in street paving, thus giving a wearing coat four inches thick. Since it is the function of the foundation to distribute the load, a thickness of four inches in the wearing coat is not required unless for some other reason. When a brick pavement has worn down about three-fourths of an inch on an average, there are so many spots where the wear has been three times greater, that an entire renewal becomes necessary; for this reason three inches seems to be the maximum thickness necessary in brick pavements, while if the traffic is so light that wear is inappreciable, as upon most residential streets, two and one-fourth inches is an ample thickness, and this may be secured by laying the ordinary "pavers" flatwise. It may be argued that when so laid the brick will crack or tilt up under a heavy load. That they neither crack nor tilt is proven by an examination of brick sidewalks across which heavy loads have passed over flat bricks; and it may also be observed that in spots where bricks have been worn until only one and one-half inches thick, the brick remain uncracked.

"Granite and other stones wear round by the chipping off of corners, and in comparatively few years a stone pavement becomes so rough and slippery that it must be renewed. Brick wears far more slowly than macadam, but when worn only a fraction of its thickness, the entire surface coat has to be renewed on account of its very uneven wear. Macadam on the contrary needs only to be picked up and re-rolled to put it in as good condition as new, except, of course, for the material lost by wear. Asphalt wears more slowly than brick, but it rots out in fifteen to twenty years, so that where the wear of traffic is slight, brick should always be selected if economy alone governs. Tar macadam will be found subject to the same deterioration by rotting as asphalt. I would therefore suggest that where such pavements are built the whole thickness should not be bound with tar or asphalt, but only the top two inches—a thickness that will wear out before it rots out.

"While upon the subject of durability, a few words as to the maintenance of macadam may not be out of place, for cost of maintenance is the ground upon which it is frequently rejected. Macadam 'ravels' in dry weather, but it is a mistake to suppose that, therefore, it requires constant sprinkling. Over some of the recently built New York State roads a sprinkler passes several times daily, doing little good at great expense. What a macadam road does require is an occasional drenching when and where it begins to show signs of raveling, which is accomplished by going over a short section time and again with a sprinkler during the night; for if the sun is up the water has not time to soak in before it is evaporated. Done as suggested, the cost of maintenance is greatly reduced. A thin coat of sand over the surface will further reduce the rapidity of evaporation."—*Engineering News.*

LOOKING ON THE BRIGHT SIDE.

You get out of life just about what you are. If you smile, people smile back at you. If you frown, you will find plenty of persons to do the same. You can have sunshine or dark clouds as you will. A sunny disposition around a business establishment is a godsend. It is the best kind of an advertisement. It does more to draw trade and to hold it than almost anything else. The business of to-day isn't a seizing of an individual and compelling him to buy your goods, as was once the idea of merchandising. On the contrary, it is making your display of whatever commodity you may manufacture or handle so attractive and offering it under such advantageous conditions that the possible customer will do the initiative and you simply meet his wants. Trickery of any kind doesn't pay in business to-day, whatever it may have done in former days. The man who doesn't treat a child with due consideration, and in whose place of business the toddling infant can't buy to as good advantage as does the full grown person, doesn't understand the first principle of business.—*Facts.*

A NICE SOUVENIR.

THE Sprague Umbrella Co., of Norwalk, O., will be at all the expositions this fall, both in New York and Cincinnati, and every dealer will be able to carry away one of their beautiful parasols and delight the little ones at home. Don't fail to see their beautiful line of canopies.

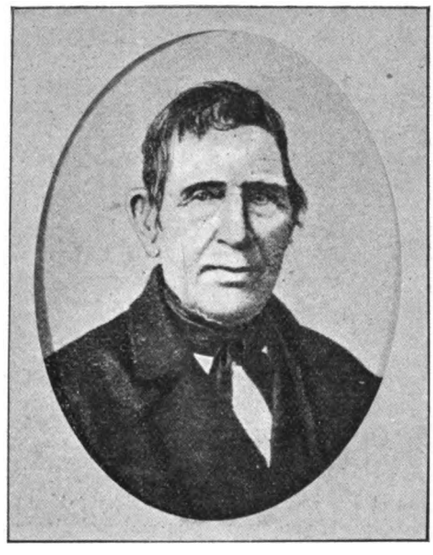
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THE PATENT LEATHER INDUSTRY OF NEWARK, N. J.

A Short Sketch of Its Founders and Present Conductors.

THE city of Newark, N. J., holds a pronounced foremost position as a manufacturing city, not only as to the value of its products but in their variety as well. How great these are may be inferred from the latest obtainable official information. The census of 1890 showed that there were two hundred and three distinct industries, giving employment to 46,848 persons other than clerks; paying wages of $26,857,170 annually; value of products, $93,476,652. It is not our intention in this article to attempt any general review of these numerous industries, but we mention these facts as a proof of Newark's greatness as a manufacturing center.

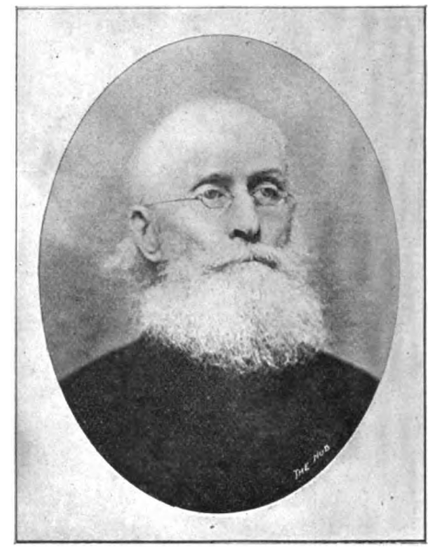
Very many important industries had their origin in Newark and continue to be among the foremost. Among these is the manufacture of what is known as "patent" leather. Why "patent" none can tell, as no patent was ever taken out, but Seth Boyden was without doubt the first to attempt its manufacture. His attenion was drawn to the production of glazed leather several years anterior to his attempts at making it, by the glazed leather that was used on the winkers and some other parts of imported harness, and the same kind of leather that was imported to a limited extent by Newark harness manufacturers. This leather had the appearance of the smooth patent leather of today, but it was lacking in wearing qualities, as the glossy coating which was little, if anything more, than a lacquer, cracked and scaled off in a short time after being put to use. This leather was



SETH BOYDEN.

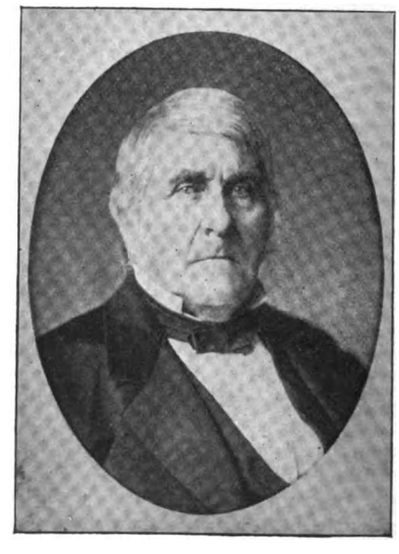
designated glazed leather and its manufacture was credited to both English and French leather manufacturers. Mr. Boyden, although not acquainted with the manufacture of leather, determined to produce a "varnished" leather that would possess all the good qualities of the imported article without its defects, and with crude appliances and an incredulous public he began his experiments.

Before entering further into the manufacture of patent leather it will not be out of place to say a few words regarding its inventor, Seth Boyden. Mr. Boyden was born in Foxborough, Mass., November 17, 1788. He was of English descent, the first of his family coming to America in 1634. He had a strain of Indian blood through a half-breed Indian girl who became the wife of Seth Boyden of the fourth generation, through whom he also obtained a strain of Irish blood. In his youth he developed marked genius for manufacture and made a telescope before he was fifteen years old, and from that time on until his death he was ever on the alert. He turned his mind and hand in every direction, not for the money he could get but from the desire to produce something new, and just as soon as his ventures became a success he turned his attention in another direction. He engraved on steel, painted portraits, worked in iron, made watches and locomotives, patent leather and machines for felting hat bodies, and when too enfeebled by age to follow other pursuits he cultivated strawberries and developed some new crosses of great sizes and richness. He never learned a trade, but seemed to be able to work at any. He was not prepossessing in appearance and was



D. B. CROCKETT.

somewhat careless as to personal attire, but no problem proved too great for his mechanical mind. The writer recalls a visit to him in the year 1869, when he was in his eightieth year, and found him enthusiastic regarding mechanics. His was a master genius, one who gave much to the world, but one who profited little from the results of his years of toil; but one whose name will ever rank among the first of American inventors. He died in March, 1870, and the Board of Trade of Newark erected a bronze monument to his memory, which is stated to be the first monument erected in this country to



SAMUEL HALSEY.

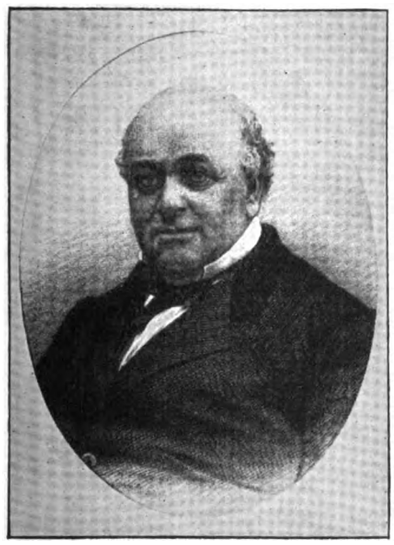
commemorate the name and fame of an American mechanic and inventor.

Mr. Boyden began his experiments in a small shop in Bridge street in 1818. He succeeded so well that in 1820 he finished and sold six-

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teen skins and in 1824 the increase was such that the product was valued at $4,500, and in 1828 it reached the sum of $21,500. Up to this time and a little later, all the product was confined to hard leathers or calf skins, and all large stock had to be reduced to required weight by hand, as there were no splitting machines that would split large hides. Very much of the product was for shoes, and owing to the want of faith in American products, the leather was stamped and labeled in French. The French names answered the purpose, and no one undertook to learn whether they were genuine or false. The introduction, however, of the large splitting machine completely revolutionized the entire industry, as large hides could be split and two or three splits had from one hide, all of which had to be shaved off by hand prior to this date. Before this machine was perfected, however, the possibilities of producing soft leather for carriage tops, to take the place of oil dressed hides, had been settled and the product best known as enameled had been introduced to a limited extent, but enough to prove its value. The price, however, stood as a barrier, and it was not until the splitting machine made it possible to double or triple the quantity that could be made from one hide, and save the labor incident to shaving the skin to the required thickness that enameled or thin patent leather was placed in a position where they could be manufactured to a profit.

Just so sure as Seth Boyden was the inventor of patent leather, was D. B. Crockett the man who first produced a hide of enameled leather. Mr. Crockett had worked in concert with Mr. Boyden in his early experimental days, as did also Otis Boyden, the brother of Seth, and the story goes that it was because of the claim made by



T. P. HOWELL.

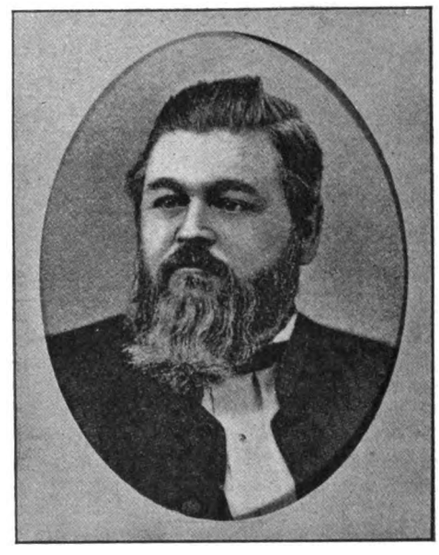
each one of the three, that he was the inventor of "patent" leather, that no patent was taken out, as neither would agree that it should be issued to other than himself, and yet all agreed that to Seth Boyden was due the credit of first attempting its manufacture, and Mr. Boyden himself stated to the writer that Mr. Crockett was the first to "board" and "break" a hide of enameled leather. This hide was a large one, one that would delight the manufacturer of enameled leather today. It was taken from a monster premium ox that after being kept on show in Newark was killed and the hide was obtained by Mr. Crockett and was tanned and japanned by him as well. The shaving down to the required thickness was the work of a skilled beam hand. It was tanned by the most rapid bark tannage known at that time, and owing to the small dimensions of the ovens it had to be stretched by laying it over a wide center piece and drawing the sides down. Mr. Crockett took great interest in this hide. He fully understood the boarding of goat skins, and he reasoned that he could board a large hide in the same manner, providing he could secure a coating that would neither stick nor crack. His anxiety was such that when on a Saturday night he found that the coating was in the desired condition, he resolved to complete his experiment on the next day, and, as he related to the writer, he entered his shop very early Sunday morning, pulled down the blinds and began his work, and when the church bells were ringing he was boarding the great hide, and before the close of the morning services he achieved success and established the fact that a hide of leather could be japanned and boarded to give it a mottled or slightly uneven surface, now designated as enameled, that would fit it for covering for carriage tops instead of the wax cowhides then used, and from that time the manufacture of patent and enameled leather became as much a commercial as it was a mechanical success.



CHARLES H. HARRISON.

Just when Seth Boyden left the business we have no record further than it was in the early thirties. With this as with other inventions he was wont to say: "When its novelty had ceased and I had other objects in view the natural course was to leave it." But able hands took up the work and the industry grew until it became one of the largest and most important of the many great industries of Newark, and "patent" leather that the genius of Boyden and Crockett made possible became not only a product of our country, its birthplace, but also that of the other great manufacturing countries of the world, and every community where covered carriages are seen, where carriage harness is used, where shoes are worn, as well as other articles where it finds a use are called for, is indebted to the genius and skill of the American inventor.

After the names of Boyden and Crockett comes a goodly number,



NOAH F. BLANCHARD.

who by their genius, skill and enterprise, made improvements that increased the value of patent leather and improved its manufacture, and made its production one of the world's industries. The names of Halsey, Howell, Ward, Blanchard, Harrison, Smith, Straus, Reilly and Stengel have so long been known in its manufacture that

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to omit their mention when writing of the industry would leave a blank that would rob the history of half its interest.

Few industries that had their origin in any one town and grew to any considerable magnitude remained so fixedly a part of that town's industries as has that of patent leather, and now after a lapse of more than three-quarters of a century fully 90 per cent. of the entire product of this country is made in the Newark factories, of which there are twenty-six, great and small. Of the older houses those of the brothers Ward and Chadwick only have ceased to exist. Others have changed their personals, through death mainly, but the business has gone on unbroken, and with few exceptions without financial reverses, and nearly, if not quite, all grew from small beginnings, the men who started them being men who learned the trade and worked as journeymen in one or another branch of the business and became not only prominent as manufacturers but as merchants, bankers and members of state and national legislative assemblies. In these respects we doubt if there is an industry in the country whose aggregate number of individual heads of houses can make such a showing as leaders as has that of patent leather.

It is not our intention to discuss the details of manufacture, but to give an idea of the magnitude of the business; we may glance rapidly over the field and by a general review accomplish our purpose. Few industries require so great a ground space, as large yards are necessary for bark storage, dying, etc. Then, too, there must be large

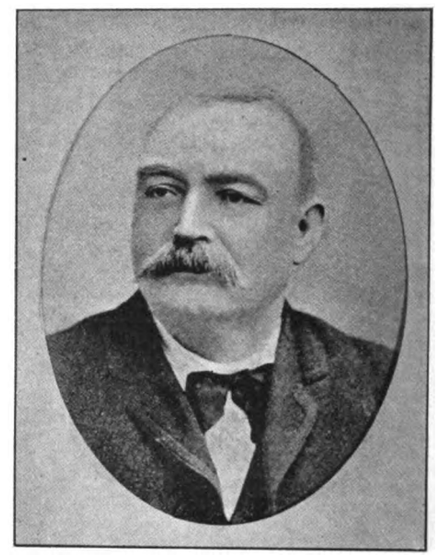


HON. GEORGE A. HALSEY.

floor space for working through the various processes necessary to complete the stock and fit it for use.

The hides from which carriage leathers are made are the best selections of hides that are produced in the country and necessarily the highest priced. A large amount of them are produced by the packing establishments of the West, while many are imported, the best of which come from Paris. The reason of this is the hide has to be as clear grain as possible, and even with the clearest of selections there are the horn scratches and the scratches from the barb wire fences, which it is impossible to detect while the hair is on the hide; so that even in the closest selection of No. 1 hides, a large quantity of No. 2 leather is produced. The standard measurement of a patent leather hide is supposed to be 6 feet 8 inches, and in selecting it, it is measured across the brisket, with a pole stretched across the hide just back of the fore legs. If it is 6 feet 8 inches it is called a standard hide, but at times it is necessary, through the scarcity of hides and high prices, to go to 6 feet 6 inches, and in some classes of hides for carriage trimmings, to go to 6 feet 4 inches.

In the process of manufcature they first go to the beam house where they are hung suspended over a beam in a pool or vat of clear water for about eighteen hours to remove the dirt and the salt; from there it goes to the lime pool, and kept in the lime for about eight days, the line loosening the roots of the hair; from there it goes through what is called an unhairing machine and the hair is scraped off. From the unhairing machine the hide goes to the flesher where the workman with a sharp knife shaves off the flesh from the hide and trims it up around the edges. It then goes to the worker or the striker to remove the spots of hair and short hair that have been left by the unhairing machines. It next goes into the vat where it is "pured," that is the lime is killed, and the hide is then thrown into what is called the wash wheel; a stream of water runs through a pipe, and as the wheel revolves the hides are tumbled in this flow of water



JOHN REILLY.

until the water coming out of the wheel is clean and clear, showing that all impurities have been removed. When the hide comes out it is a pure raw hide, clean, soft and velvety, ready for the tanning. It is then placed in the tanning vat, hanging suspended in what we call a rocker, which received its name from its being movable and pendulum like, and it works about three or four times a day up and down so as to keep the liquor stirred, preventing the heavy liquor from settling at the bottom and giving an even tannage all through the hide. It is then taken to the drying loft, and all of the surplus liquor taken out of it by drying, leaving it in what the tanner calls a



SAMUEL C. HOWELL.

"sammied" condition, or an even moisture all through; it is then sent to the splitting machine where it is split into two or more parts, the one from the hair side being known as the grain, the other the split. The splitting requires several operations, and just as it is manipulated here so is its value determined. The different splits being worked for various purposes, the middle split is sometimes artificially pebbled to give it the appearance of "grain" and is fin-

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ished as enameled split. The best enameled leather is made of the grain. This is known as hand buff and machine buff; the former has the grain surface leveled off by hand, the knife removing the surplus in small thin pieces. The machine buffed has a full split taken from the grain without entirely removing the latter, but of sufficient thickness to be finished into a marketable leather. It is possible, however, to remove a skiving by the machine that has no value owing to its extreme thinness. The manipulation at this stage of manufacture is one of the most decided factors in determining value and quality. After splitting the grain hides and the first splits are retanned. They then go through a series of manipulations to prepare them for japanning where they are given a number of coats of material. The first coats are called the daub, made of linseed oil boiled to about the consistency of a paste; for black leathers or dark shades of fancy leather this daub is linseed oil mixed with lampblack. Then there is given a slicker varnish, a lighter varnish than the daub, put on with a steel slicker. Then the two coats of enamel varnish. After each of the coats of varnish the hide is put in and stretched out on a large frame and run into what are called the ovens, that are heated by steam through pipes at a temperature of from 110° to 170°, according to the stage of finish, increasing the heat on different kinds of leather, and on different coats. The hides are then rubbed down with a pumice stone to make them as smooth as possible. They are then taken off of the frame and put in a room called a sweller—after having been exposed to the sunlight for a few hours, to take out the harshness that comes from being dried from this extreme heat; this puts the leather in a mellow condition ready for graining, where with arm boards the workmen "board the leather," turning it as they roll it over, throwing up that pipey grain that appears on it, boarding it or graining it from different directions of the hide, making it have the pebbly appearance demanded on buff top leather. The enamel split is an artificial grain, and it is a recent production.

Quality and size both contribute to making the price. Formerly none but extra large hides were counted as the best, but as the carriage manufacturer has learned to use parts of two or more small hides instead of one large one, grading is regulated more by quality than formerly. The smaller hides range from forty-five to fifty-five feet, the next from fifty-five to fifty-nine feet; then comes the sixty to sixty-five feet, and sixty-six feet and upwards. Various leathers, such as skirting, etc., are made up in sides instead of full hides, as is the case with carriage top and upholstery leather.

The great Newark patent leather works produce japanned leather for every use to which it can be applied, in every style of finish, and in all colors. The hard leathers being finished smooth, while soft leathers are finished both smooth and enameled.

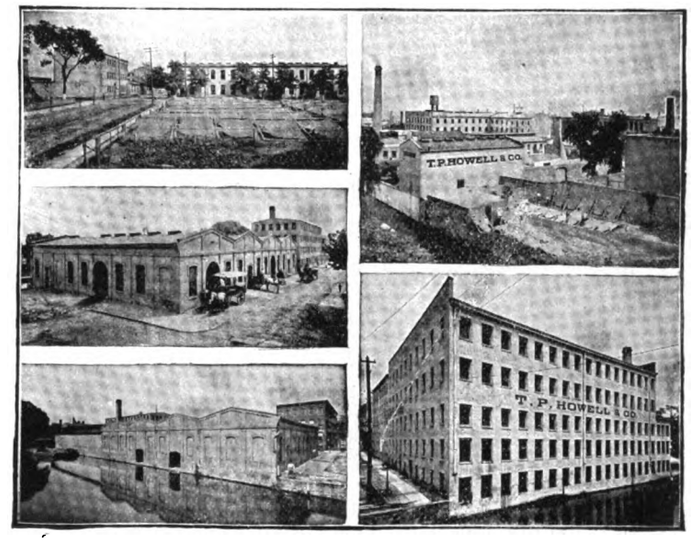
S. HALSEY & SON.

The house of S. Halsey is the oldest house in Newark engaged in the manufacture of patent leather. This house was founded by D. B. Crockett & Co., at Springfield avenue and Shipman street, in 1826, and the original building, a moderate sized brick structure, still forms a part of this now great plant. It was in this building that Mr. Crockett made the first hide of enameled carriage top leather. Samuel Halsey, together with Mr. Taylor, succeeded Crockett & Co. in 1840, under the firm name of Halsey & Taylor. In 1866 the Hon. George A. Halsey succeeded Mr. Taylor and the firm name was changed to S. Halsey & Son, and is continued under that name since that time. Samuel Halsey died in 1884, and William A. and George E., sons of George A. Halsey, who were admitted in the firm in 1882, continued the business until the death of the Hon. George A. Halsey in 1894. They became heads of the house, continuing the firm name and maintaining the high reputation gained by the house under the senior Halseys. In the early thirties the weekly output was about twenty hides. This has been increased until it counts into the hundreds, and the original building has been added to until it now forms but a small portion of the structure. The necessity for greater space necessitated further enlargements, and the company now occupy three distinct plants and have markets for their product in every part of the United States and ship large quantities to various parts of the world. They were the first to engage in exporting patent leather, having begun that trade nearly fifty years ago, and their brand is known and accepted as a guarantee of quality wherever patent and enameled leather is used. The late Hon. George A. Halsey was active alike in business and political life. He was twice elected to the State Legislature. On the establishment of the internal revenue system, during the War of the Rebellion, he was appointed United States assessor of the Fifth District of New Jersey, which included Newark, and proved his ability to the satisfaction of all. In 1867 he was elected member of Congress by a large majority in a strong Democratic district, and was a member of the committee that established the present national banking system. He was again nominated for Congress, but was defeated, but again in 1871 he was returned to Congress. He was nominated for Governor of the State by the Republican party in 1871, but was defeated by his Democratic opponent. He died suddenly in 1894 of acute pneumonia, mourned alike by the community in which he lived and by political friends as well as opponents. Few man were better known in the carriage trade. He was a regular attendant at the C. B. N. A. conventions and always took an active part in the proceedings.

His sons, William A. and George E., who are now so successfully conducting the great business, were both schooled in every detail from the tan vat to the counting room, and the success that is attending them is evidence sufficient that the house of S. Halsey & Son has fallen into able hands.

T. P. HOWELL & CO.

The T. P. Howell Co. was founded in 1840 by Theodore P. Howell when about 21 years of age. He had been apprenticed to his uncle, Mr. S. M. Howell, and had also worked with James Hollingsworth until he had mastered every detail of the work, and in 1840 he built a small tannery—a frame structure on a portion of the ground which now contains the largest plant of its kind in the United States, consisting of twenty-six buildings of brick and iron, three and four



PLANT OF T. P. HOWELL & CO

stories high, and covering nearly four acres of ground, while the yards cover about two acres more, the frontage on Morris and Essex canal being some one thousand two hunded feet. Each building is equipped with every modern appliance for the manufacture of leather and with electricity as a motive power. The buildings of this great plant were completed in 1896. The company's aim is to manufacture the best stock possible, using choice hides and oak bark for tanning. There are few if any markets in the world where their product is unknown, and wherever known it takes high rank. They make all kinds of smooth and enameled leathers for carriages, harness, furniture, etc.

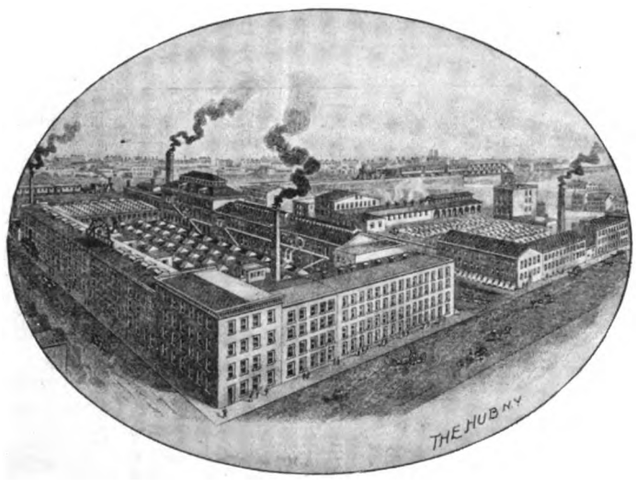
Under the guiding hand of Theodore P. Howell the little two-roomed factory grew rapidly and his successors have maintained the growth and prosperity until the present time. From the foundation until 1856 the business was under the name of T. P. Howell. In that year Abraham R. Van Nest, of New York, and Austin Jenkins, of Baltimore, were associated with the founder under the present firm name. In 1874 the latter gentlemen disposed of their interests to the Howell family. In that year the house was incorporated under a special act of the New Jersey Legislature. Theodore P. Howell died in 1878, leaving his two sons, Samuel C. and Henry C., as his successors. Up to the time of Mr. Howell's death he was a director in several Newark banking and insurance institutions, and a prominent factor in every public affair that looked to the benefit of the city of Newark. He was a highly esteemed citizen and one whose loss was a subject of universal regret. After his death Henry C. Howell had charge of the New York offices, and continued in that capacity until

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his death in January, 1900. He was also connected with a number of Newark's banking and insurance companies and other corporations. Samuel C. Howell, the only surviving male member of the family, is president and general manager of the company. He served a complete apprenticeship under his father and acquired an expert knowledge of the art of manufacturing patent and fancy leathers, and in addition to his close attention to the details of the business he finds time to act as an official or member of a number of associations, among them the Leather Manufacturers' Association of New Jersey, Newark Board of Trade, National Association of Leather Manufacturers, president of the Howell-Hinchman Leather Co. of Middletown, N. Y., and is also a member of several social clubs and organizations.

BLANCHARD BROS. & LANE.

The house of Blanchard Bros. & Lane was founded by Noah F. Blanchard in 1860, the original building having been for many years the large omnibus and cab plant of Vanderwerten, and was fitted up as a tannery by the Newark Patent Tannery Co., a company that contained Jay Gould among its members. It was, however, of short life, and it was closed out, after which Mr. Blanchard fitted it up as a patent leather plant, and a year later associated with himself his two brothers, David O. and Samuel F., who, like the senior brother, were expert tanners and japaners, and were all noted for their skill. At the same time Mr. J. P. Van Zant Lane was added, and the firm name became Blanchard Bros. & Lane, a name that is retained, although all the original founders are dead.



PLANT OF BLANCHARD BROS. & LANE.

The business grew rapidly, and soon took rank among the largest in the city and also among the best known in the trade, a result due in a great measure to the thorough knowledge of the industry by the Blanchard Bros. David O. died in 1863, Noah F. in 1881, and Samuel F. in 1889. Mr. Lane died in 1894. The great plant occupies the greater part of three city blocks, and is a model factory in every respect, having capacity for turning out 1,000 hides a week The company was incorporated in 1887, the present officers being Matthew T. Gay, president; Edw. V. Z. Lane, vice-president; Lenox S. Rose, treasurer and superintendent, and Joseph H. Gay, secretary.

HENRY LANG CO.

The Henry Lang Co. conduct one of the oldest and largest plants known to the patent and enameled leather industry in Newark. It was originally started in the early seventies by Henry Lang, an expert tanner, who was born in Scotland and came to Newark in 1830. In 1892 it was incorporated under New Jersey laws, and immediately broadened out its business sphere, reaching out for new markets and making everything in its line required by the trade. Their business made phenomenal success, and to-day they take rank among large producers of patent tipping, shoe, horse collar, and deep buff carriage and dash leathers, doing an extensive business with the carriage, shoe, automobile, furniture, saddlery and harness trades. Their goods find a market in England, and on the Continent, also in Mexico and Australia. The works are located on Seventeenth avenue, Boyd and Lillie streets. Their extensive plant has a capacity for 1,000 hides a week and employment is given to 150 hands. The company have their plant fitted up with the most approved appliances for their business, and their large ground spaces gives them the necessary room for manufacturing to the best advantage.

Mr. Lang died in 1896. Mr. J. P. La Foy and Mr. Wm. A. McManus have since bought out the late Mr. Lang's interest in the business. The various members of the company have had practical training in the leather business, and are therefore well qualified to determine what best meets the wants of their customers and to correct errors, if any, occur, and it is due to these qualifications that the plant has grown to its present size and influence in the trade.

The officers are Mr. John M. Breingan, president; Mr. Robert L. Breingan, vice-president; Mr. Julien P. La Foy, treasurer; Alex. S. Breingan, secretary, and Wm. A. McManus, general superintendent.

HALSEY & SMITH.

The house of Halsey & Smith is the second oldest house in the patent leather trade in the city, having been founded by Halsey & Tucker in 1836. J. H. Halsey, the senior member of the original house, learned the trade in its details, and was acknowledged as an expert for many years. His pride was fine stock, and few, if any, made better. Mr. Tucker retired in 1846, and Mr. Halsey continued the business until the early seventies, when he associated with himself the present member of the house, Hon. James Smith, Jr. Mr. Halsey died in 1898. The plant now occupied by the firm is one of the oldest in the city, and is admirably fitted up for the production of patent leather. For many years this house has made a specialty of high grade hand buffed leather for carriage tops, and have met with marked success. They also manufacture all kinds of fine carriage stock, together with shoe and furniture leather. James Smith, Jr., the present head of the house, is widely known in the political world, having recently been United States Senator from New Jersey, and is a strong factor in State politics. He is also prominent in local institutions, and is recognized as one of Newark's most popular and successful citizens.

C. L. & R. E. SMITH.

The firm of C. L. & R. E. Smith take rank among the larger of the patent leather houses of the city. They produce patent, enameled and fancy leathers for the carriage, harness, furniture and fancy goods trade, one of their side lines being the manufacture of embossed chair seats, of which they make about 100,000 yearly. They use a wreathed acorn as their trade-mark. The firm was organized in 1888, and has been continued, with the original members, to the present time. Their main plant consists of four story brick buildings. 44 x 90 feet, and 30 x 100 feet. Their japan rooms and drying yards occupy another site, and occupies a square of 125 feet. Their specialty in the carriage line is strictly hand buffed stock, for which they have a steady demand. Their plant is fully equipped with all the modern appliances needed for the production of such leathers as their trade calls for, the product being about 300 hides a week, in patent and enameled leathers, and employment is given to about fifty workmen.

M. CAFFREY.

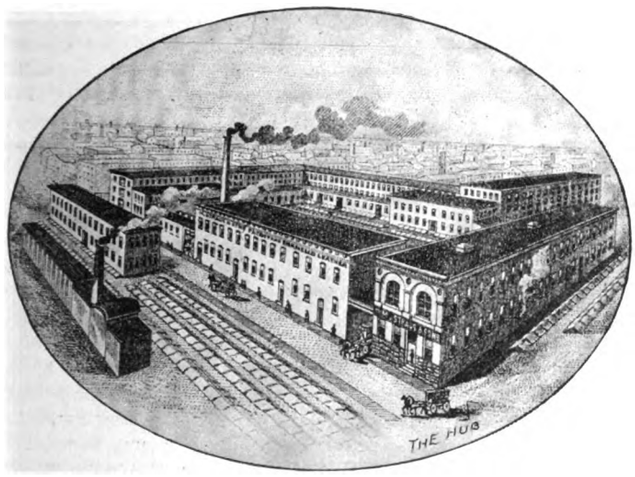
The house of M. Caffrey, patent leather manufacturer, was established in 1879, Mr. Caffrey himself being a practical tanner and acquainted with all the details of the manufacture of patent and enameled leather. He has a well equipped plant, and one of goodly dimensions, having a frontage on three streets, covering about one acre of ground, the buildings being three stories and the japan department and drying yards roomy. His output is about 250 hides per week, forty-five men being given employment. His line includes all kinds of patent and enameled stock needed by the carriage harness, shoe and furniture trades. Mr. Caffrey may be ranked among the conservative, but successful, manufacturers of the city of Newark.

M. STRAUS & SONS.

The house of M. Straus & Sons is another of the great patent leather houses that have made American patent leather known wherever leather of this character is used throughout the world. Their home trade reaches every carriage and harness center as well as the smaller cities and towns, while they export in large quantities to all parts of the world. The house was founded by Mr. M. Straus in 1865, and from small beginnings rapidly assumed a leading position. In 1895 Mr. Straus associated with himself his three

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sons, all of whom had grown up in the works and become practically acquainted with all details of manufacture, as well as a thorough knowledge of the wants of the trade. Their plant is an extensive one, covering ground equal to a full city square, but even large as it is, it is too small for their wants, and they are now erecting a new factory that will, when completed, increase the possibilities of



PLANT OF M. STRAUS & SONS

their output to 1,000 hides a week. They manufacture everything in the line of patent leather required by the carriage trade, also full lines of harness stock, together with shoe and furniture leather, thus covering the entire field. The officers of the company are M. Straus, president; Louis Straus, vice-president; Isaac Straus, secretary, and Burnett Straus, treasurer, thus keeping full control in the family of the founder.

AMERICAN PATENT LEATHER CO.

This old and extensive patent leather plant was founded by Charles H. Harrison in 1849. Mr. Harrison had a thorough knowledge of the art of making patent and enameled leather, having learned the trade from the lowest round of the ladder to the very top, his instructors being the founders of the industry. Like so many others, he had no capital if dollars and cents were counted, but he did have the knowledge and pluck. He started with six men in a little building that had but eighteen hundred feet of floor surface. His brother, John D. Harrison, joined him in 1850 and the business prospered and they built a plant for the retanning of split hides, and in 1860 they took up the full line of manufacture of patent enameled, harness, shoe and fancy stock, the firm name being C. H. & J. D. Harrison. Then business grew rapidly, new buildings were added until, as now, the ground occupied is about four acres, having a frontage on three streets. The large buildings are all fitted with the most modern appliances for conducting the business. They employ about one hundred workmen and turn out about six hundred hides a week. These are made up in patent and enameled carriage stock, furniture, shoe and saddlery leathers. They have a good export trade, their goods being marketed in many parts of the world. John D. Harrison died in 1900. During his life he held several political offices, and in 1876 was elected sheriff of Essex county; he was also an official in several insurance and banking companies. The company was incorporated under the firm name of American Patent Leather Co; Charles H. Harrison, president; Charles S. Harrison, son of John D., secretary and treasurer. Charles H. Harrison is now the oldest man in the patent leather industry, having rounded up more than four score years, but each day finds him at his post in the factory.

GEORGE STENGEL.

The name of Stengel has long been connected with the manufacture of patent leather in the city of Newark. Christian Stengel in 1851 had learned the trade of a tanner in Germany. George Stengel grew up in the business and later on became a partner with his father. The founder died in 1875 and the son continued business on his own account. As the trade grew the plant was increased in size and consolidations were made with other companies, these being in various parts of the city. A new plant was erected and when the buildings are completed the entire business will be moved into the great brick buildings now nearly completed, and the plant will be one of the largest in the United States, and employment will be given to two hundred men. The line produced by Mr. Stengel is high grade carriage, furniture and shoe stock of all kinds.

HUGH SMITH CORPORATION.

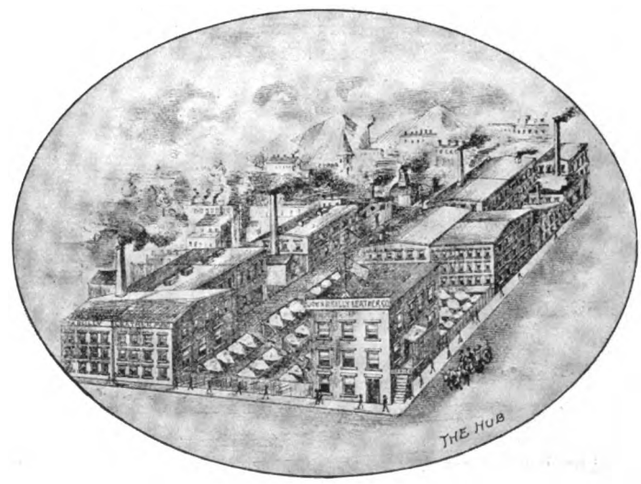
Hugh Smith, the founder of the Hugh Smith Corporation, began business in a small way in 1862. Mr. Smith was a practical tanner and japanner, and was familiar with every detail of the manufacture of patent leather. He, like many others whose capital was more in skill and pluck than in dollars and cents, had a hard fight and saw many discouraging hours, but a steadfast purpose and careful management won, and now he has the satisfaction of having founded an establishment that ranks among the largest and most prosperous in the city. The Hugh Smith Corporation, incorporated in 1889, is a family affair, as all the stock is held by himself and his children. His two sons, who were brought up in the business, take the burden of the business upin their shoulders and are continuing the success of their father. They manufacture all kinds of carriage leathers and stock for shoes, furniture and fancy goods.

E. H. MCCORMIC.

The plant of E. H. McCormic, manufacturer of patent and enameled leather for carriages, shoes, saddlery and fancy goods, is among the large houses in this industry. The main buildings being three story brick structures, these being fitted up in the most complete manner for the production of this line of goods. The japan shop, a separate structure, is large and commodious, and the drying yards mple. Mr. McCormic has an extended trade and his business is a growing one.

JOHN REILLY CO.

The John Reilly Co. is among the oldest as well as the largest of the Newark patent leather houses, the plant having been founded in 1865. Mr. Reilly having learned the trade in Newark and started in a small way on his own account, he took up the manufacture of patent and enameled leather for carriages, also for saddlery and harness, and later for shoes and furniture. His business prospered and he gradually added buildings until his plant took place among the largest in the city, the ground space being about four acres and floor space being about 75,000 square feet. The last addition to his plant was made in 1899—a three story brick building used for office and warehouse. In every department the appliances and fittings are of



PLANT OF JOHN REILLY LEATHER CO.

the most modern character, which enables the company to produce full lines of goods of the most desirable kinds. They have a capacity for five hundred hides weekly and employ about one hundred workmen. Their trade is very largely in this country, but they have a growing export business. Mr. Reilly is prominent in business and political life and a member of several trade associations. While leaving many details of his business to the younger members of the corporation, he has a general supervision over all. The company was incorporated in 1897 with the founder as president, Mr. B. J. Reilly, vice president, and Mr. T. S. Miller, secretary.

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E. S. WARD & CO.

E. S. Ward & Co. was established in 1879. The original plant was of moderate dimensions, but the foundation was laid for a good business from the start, Mr. Ward being one of the most popular men in the trade. Mr. Ward died a few years ago and since his death the business has been conducted by Robertson S. Ward, son of E. S Ward, and John Conroy. The company's plant is a modern brick structure of ample dimensions, the high smoke stack being visible to all travelers entering Newark by way of the Pennsylvania Railroad. The company manufactures a full line of carriage, furniture, patent and enameled leathers for the home and export trade.

THE ATLANTIC LEATHER CO.

The Atlantic Leather Co. is, so far as the present business name is concerned, a young company. The plant occupied by them, however has been used as a patent leather factory for fully twenty-five years. The grounds are ample, covering about fifteen city lots. The buildings are well fitted up for the business and the facilities are such that the work can be done with economy and dispatch. The capacity



ATLANTIC LEATHER CO.

is about two hundred and fifty hides per week. The leather made is of all kinds required by the carriage business, saddlery, furniture and shoe trades. The members of the company are practical leather men, who learned their business in the manufacturing or office, and are therefore fully qualified as conductors of the business. The company was incorporated in 1899. The officers are: F. Schwarzwaelder, president; Peter Loehnberg, vice president; John W. Judson, treasurer; J. Henry Loehnberg, secretary.

P. RIELLY & SON.

The plant of P. Rielly & Son is one of the largest in the patent leather industry. Mr. Rielly learned the trade of tanner and japanner with Halsey & Tucker, and later on he was superintendent for William Dunn. He began business in 1870 as one of the firm of McClatchy, Reilly & Smith. This firm was dissolved in 1876 and Mr. Rielly started on his own account. His plant was destroyed by fire in 1888, after which a new plant was erected, and since then additions have been added which make it one of the largest in the industry. The present buildings are two and four story brick, 45 x 200 feet each; a two story japan shop 40 x 278 feet, and several of smaller size, all fitted up with the most modern of machinery and appliances. The firm was changed to a corporation in 1894, with John Rielly as president, M. A. Rielly as vice president, and James Rielly as secretary and treasurer.

M. E. RIORDAN.

M. E. Riordan is among the younger of the Newark patent leather manufacturers. His plant is well located as to room and the building is a three story brick structure, well fitted up with the modern appliances needed in the manufacture of patent leather. He includes in his manufacture all kinds of patent and enameled leather for carriages, also collar leather, shoe tipping and fancy morocco for furniture upholstering. His trade is growing and his product is such as to meet the requirements of the trade.

L. M. SMITH & SONS.

This company is among the younger houses of importance in the patent leather trade, although the senior member had been associated with the trade since 1869. The present house was founded in 1887. The product of the plant is made up of patent and enamled leather, also by furniture leathers and fancy stock. They use about two hundred and fifty hides a week and give employment to about thirty skilled workmen.

There are a number of patent leather houses in Newark who are not mentioned this month owing to lack of information regarding them reaching us in time for publication in this month's HUB.

OTHER NEWARK INDUSTRIES.

J. M. QUINBY & CO.

The carriage house of J. M. Quinby & Co. is one of the oldest in the country, so far as we know. There are but two others that retain the original firm names that are older. The original house was founded by G. & A. K. Cartir. That company failed in 1834, and James M. Quinby, then foreman for the firm, purchased the plant, and his name has been retained until the present time. For some years after the purchase Mr. Quinby ran the business in his own name. He took as his first partner Mr. G. M. Spencer and the firm name was changed to J. M. Quinby & Co. Later Augustus Ball was admitted and on his retirement Isaac Young became partner. All these have died. Mr. Quimby himself died in 1874, aged 70 years, having been at the head of the house for forty years. The house has always stood for high grade goods, the best of its day. Prior to the sixties the greater part of the product was marketed in the South,



PLANT OF J. M. QUINBY & CO.

and the name of Quinby on the carriage was looked upon as the highest proof of quality. The original plant was destroyed by fire in 1856, but immediately after an enlarged plant, the buildings of which were brick, was built on the old site and remained until the property was purchased for a depot by the Newark & New York Railroad Co., after which the commodious plant now occupied by the company was erected near the depot of the Morris & Essex Railroad Co. Those who succeeded the original founders inherited their love for fine carriages and have kept their standard well to the front since that time, ranking with the first in style, construction and finish. The house is now a corporation under the old firm name. The officers are: W. W. Ogden, president; Emerson Brooks, vice president; H. D. Ogden, treasurer, and H. W. Sufferin, secretary. Mr. W. W. Ogden has long been a member of the C. B. N. A. and for several years one of the board of trustees of the Carriage Builders' Technical School.

C. N. LOCKWOOD & CO.

This house is one of the oldest in the line of carriage lamp manufacture in the United States, and from it come some of the most skilled in the carriage lamp business. It was founded in 1845 by Roberts & Eagles; later on Charles N. Lockwood was admitted as a member, and the firm name was changed to Roberts, Eagles & Lockwood. Later Mr. Roberts withdrew, and the firm name was changed

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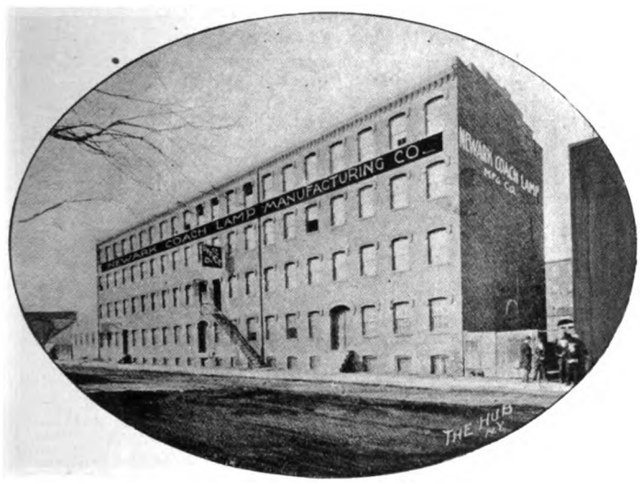
to Eagles & Lockwood, and in 1850 another change took place and the firm name became C. N. Lockwood & Co. No further change was made until 1897, when it was incorporated under the old firm name. The plant is one of the best equipped in the country, every appliance necessary for the production of lamps being included. The plant is lighted by electricity produced in the factory, the power being steam. The floor space of the factory is about 15,000 feet. Every kind of lamp called for by the carriage and automobile trade is made. At the present they are doing a very large business in the manufacture of automobile lamps. Mr. Lockwood, whose name has so long been known in connection with the carriage lamp trade, died in 1896, aged eighty-three years. The company, as now organized, has for its officers Messrs. C. L. Ingraham, president; H. F. Seidler, vice-president; C. F. Eberhard, treasurer; A. H. Attwood, secretary.

GEORGE ENDERS.

George Enders, lamp manufacturer, is the youngest house in this line in the city. He is a practical mechanic, having long been in the employ of C. N. Lockwood & Co. He has a small but well fitted up plant, and is making a success by furnishing a good quality of lamp, and selling at prices that meet the views of carriage manufacturers. He prides himself on making lamps that will burn under the most adverse circumstances.

NEWARK COACH LAMP MANUFACTURING CO.

The Newark Coach Lamp Manufacturing Co., although comparatively a new house, have built up a lucrative business. Before forming this company the members thereof had a good practical training in the carriage lamp industry and a knowledge of the wants of the carriage trade. They produce a popular line of lamps, and are specially careful as to the burning and lighting qualities. Their plant is fitted up with full lines of modern machinery and appliances for the manufacture of lamps and employ a force of skilled workmen. They are fully up to the times in styles, and are on the alert for new ideas in the lamp line. Every kind of light is provided for, whether it is for oil, candle or other material. One of their new features for



PLANT OF THE NEWARK COACH LAMP MANUFACTURING CO.

this season is a large oil fount, held in the lamp by suction. The company will have an exhibit at the New York Dealers' Show. Messrs. Walter and Hattel will be in charge. The officers are Charles Walter, president; Gustave Schmidt, treasurer, and Gustave Hattel, secretary.

PHINEAS JONES & CO.

PHINEAS JONES, founder of Phineas Jones & Co., wheel plant, was one of Newark's most trusted citizens and a man of rare genius and energy, and the great house founded by him is one of the most noted in the vehicle wheel industry. He held many positions of trust in financial institutions and was honored by his fellow citizens by being elected to the United States House of Representatives, and declined another nomination after having most acceptably served his constituents. The business was founded in Worcester, Mass., in 1848 and removed to Elizabethport, N. J., in 1855, where he was joined by Mr. E. J. Whitemore and transacted business under the firm name of Jones & Whitemore. The latter retired in 1860 and Mr. Jones moved the business to Newark and admitted William H. Baldwin as a partner, and the firm name was changed to Phineas Jones & Co. Henry P. Jones, son of the founder, was admitted in 1875. The senior Mr. Jones died in 1884, and the business was con-



HENRY P. JONES, OF PHINEAS JONES & CO.

tinued by the surviving partners until 1896, when Mr. Baldwin retired and Henry P. Jones continued the business under the old name. The name of "Jones" on carriage wheels has long been, and is, a stamp of excellence, and the present Mr. Jones does not intend that it shall ever loose its measure of excellence. Henry P. learned the trade under his father's guidance and imbibed his enthusiasm and progressive habits. The plant ranks among the large houses in its line. The buildings are large brick structures, having about forty thousand feet of floor space and equipped throughout with the highest class of machinery for wheel manufacture. The capacity of the plant is about fifteen thousand sets of wheels a year, employment being given to about eighty workmen.

SEARLES MANUFACTURING CO.

The Searles Manufacturing Co. is one of the oldest, if not the oldest, houses in the whip socket trade in the United States, and the line of goods consists of a great variety of wood whip sockets of special merit and novel construction. In addition they make all popular lines of whip sockets, and make a full line of fine carriage and sleigh rails, screen dashes, etc., also pole crabs, shaft tips and other metal carriage and sleigh furniture. The house was founded away back in the sixties, and has long been a pronounced factor in the supplying of goods in its line and those of a high quality. Their plant is a model one in its line and is fitted with every appliance for the production of fine work. We doubt if a better equipped establishment can be found in connection with any other line of business, neither is there a house that is more favorably known. Having established a high standard of excellence and placed prices where they can meet the views of the buyers, the house has obtained a hold on the trade that gives assurance to the old customers and invites trade from those who have not been counted among its patrons.

BERRY-GUERIN CO.

The Berry-Guerin Co. is a young organization, its career beginning the latter part of the year 1900, but the working members of the house have long been connected with the manufacture and sale of fine carriage houses. Mr. Berry has had a lifetime experience in the harness and saddlery industry. For five years he was connected with the saddlery hardware business, and for the last fifteen years he has traveled for the house of Tomkins & Mandeville. Mr. Guerin was with the same house for eighteen years as bookkeeper,

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buyer and in the factory. The company manufacture fine harness for the trade only, making a specialty of single and double road harness and speedway harness of the finest quality. The company was incorporated in 1900 with A. B. Berry, president, and E. B. Guerin, secretary and treasurer.

MURPHY VARNISH CO.

The records of few houses show such phenomenal growth as that of the Murphy Varnish Co., manufacturers of coach, car, furniture, and other varnishes, also coach and railroad car colors. The house was founded by Franklin Murphy, who started with vigor that startled the old houses in the business, and in a very short time the Murphy varnishes became a factor in the coach and railway car trade. A few years later he was joined by his father, Wm. H. Murphy, and James G. Barnet, two successful business men of Newark. With the increased capital and added counselors the company immediately enlarged its facilities, broadened its scope and fairly raided the market. Having started to make the finest of varnishes for the specific purposes, and established a high reputation for their goods, there was a solid foundation for enlargement, and new buildings were added and improved facilities employed for manufacture, storage and shipping. The manufacture of coach and car colors was entered into, and the same care that made the reputation for the Murphy varnishes was exercised in the production of colors, and scientific skill, aided by the chemist, brought forth a brilliant array of colors, and Murphy colors took their place alongside of the well tried Murphy varnishes, and like the latter are known and appreciated by painters and varnishers throughout the world.

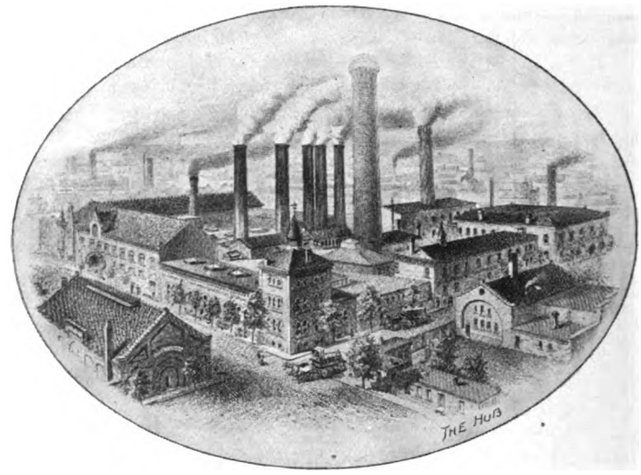
Notwithstanding his busy business career, Franklin Murphy has



FRANKLIN MURPHY, PRESIDENT OF THE MURPHY VARNISH CO., AND REPUBLICAN CANDIDATE FOR GOVERNOR OF NEW JERSEY.

found time to enter largely into public life and to mingle with his fellows in social, political and association affairs. He is a member of the Carriage Builders' National Association, and president of the Board of Trustees of the Carriage Builders' Technical Schools. The Republican convention of the State of New Jersey last month selected Mr. Murphy as the party's nominee for Governor of that State, and if elected, there can be no doubt of the State having an able and honest executive. Mr. Murphy is in the prime of life, an agreeable gentleman, a fluent speaker and a citizen and business man of sterling integrity.

Wm. H. Murphy is now well over the four score line of life, but is yet active in business affairs. Mr. Barnet died in 1899. The com-



PLANT OF THE MURPHY VARNISH CO.

pany was incorporated in 1891. The officers are Franklin Murphy, president; James Merrill, Jr., vice-president; Franklin Murphy, Jr., second vice-president; Wm. H. Murphy, treasurer, and Charles D. Ettinger, secretary. The company have branch houses in Boston, Cleveland, St. Louis, Chicago, San Francisco and Paris, France.

PALMER-PRICE CO.

This company, under the present title, was formed five years ago. The different firms consolidated were, The Bolen-Bond Co., who made nothing but car and carriage varnishes; Arthur W. Palmer & Co., who devoted themselves largely to piano and cabinet specialties, and the George F. Price Co., who were particularly interested in architectural varnishes. The present company are making a full line of these goods, special attention being given to high grade carriage and car varnishes. The worth of their products is demonstrated by the steadily increasing business which their books show. The officers are George W. Hoyt, president; Charles Z. Price, secretary; Matthias J. Price, treasurer, and I. V. Bond, superintendent. Mr. I. V. Bond, the superintendent, is well known as one of the best varnish boilers in the country.

FLOOD & CONKLIN.

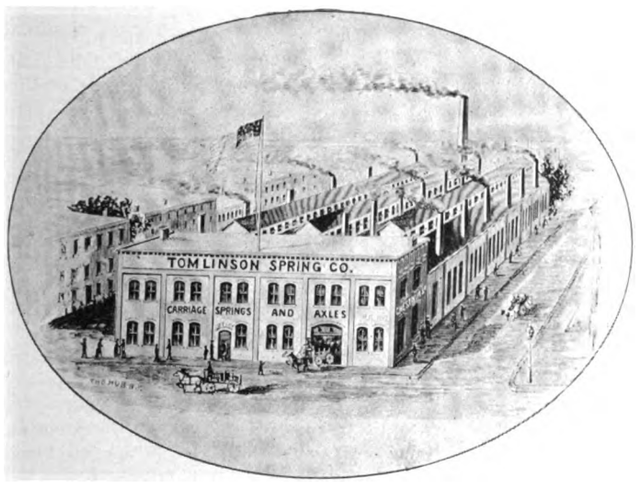
Quietly, and almost without attracting attention, the house of Flood & Conklin, varnish manufacturers, has grown from small dimensions in 1886 to a mammoth plant consisting of one fine brick building, 328 x 100 feet in dimensions, having an L of 175 feet, to which was added last summer a storage building 50 x 105 feet, with ample yard room, and replete with every appliance and convenience for manufacturing and storing varnish, japans, oils, etc., for carriages, cars and furniture. The offices are large and are made attractive by fittings and private offices are provided where the customer can rest comfortably while placing orders or discussing business and other matters. And just here we advise the customers of this house to visit the plant if for no other purpose than to be shown the fine collection of fossil gums, specimens of kowrie pine, with an inch or more of gum that has exhuded to its bark surface; fossils mixed with coal and others with lava, fossils of great size and others not much larger than a pea, all of which have special interest. The rare specimens of kowrie were gathered by Mr. Flood last year when on a visit to New Zealand. It would be difficult to find a more complete plant or one better adapted to the manufacture of varnish. Everything betokens good taste and care, and all combined tend to impress the visitor with the feeling that the firm who shows so much interest in the perfection of their plant can be trusted to produce high grade goods. High grade has been their aim and their product has won its way to the front through its good qualities, not the least of which is uniformity. Mr. P. F. Flood has been connected with the varnish industry for many years. He is a member of the Carriage Builders' National Association, having joined in 1881, but was present at the first meeting in 1872, at which time

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no provision was made for members from the accessory trades. In 1891 Mr. F. Conklin joined with Mr. Flood and the company was incorporated. The present officers are: P. F. Flood, president; Franklin Conklin, vice president, and Samuel D. Conklin, secretary and treasurer. The company has confined its business to the home trade until recently, when they added exporting, and now enjoy quite a trade with foreign countries.

TOMLINSON SPRING CO.

The Tomlinson Spring Co., manufacturers of carriage, wagon and other vehicle springs, together with vehicle axles, is acknowledged as one of the most substantial houses in its line in this country. It was organized in 1868, from the New York Spring Co., which was founded in 1865, at Hackensack, N. J., and was incorporated under the laws of the State of New Jersey by John A. Gifford. W. G. Lineburgh, Theodore Gray and Cornelius Van Horn. In 1867 a new factory was built in Newark, into which the company moved. In 1868, the corporation became the Tomlinson Spring Co., with the same officers as those of the old company. The plant is a substantial brick building, 100 by 250 feet, the main building being two stories high. The machinery and other fittings are of a high order, and employment is given to about fifty skilled workmen, producing a high grade of springs and axles of all the approved types. The officers of the company are John A. Gifford, president; W. G. Lineburgh, vice-president; Theodore Gray, secretary, and E. M. Hotchkiss, treasurer. No change has ever been made in the personnel of the company, since its organization, except through death, a record that is seldom made. Mr. J. A. Gifford is well known as one of the oldest and most reliable men in the carriage material trade, his store being in New York City. Mr. Lineburgh is a resident of Bridgeport,



PLANT OF THE TOMLINSON SPRING CO.

Conn.; Mr. Gray and Mr. Hotchkiss are residents of Newark. The company hold a membership in the Carriage Builders' National Association, Mr. Hotchkiss being the popular secretary and treasurer of the Board of Trustees of the Carriage Builders' Technical School.

D. DELANY & SON.

The house of D. Delany & Son, manufacturer of vehicle springs, was founded by D. and P. Delany in 1860, both of the founders being practical and expert spring makers. At first the factory was a small one, but the product was of the best, and business grew to satisfactory proportions in a few years. P. Delany died in 1865. Daniel shortly thereafter took his son John M. as partner. The younger member had obtained a good business education, and the two made a most excellent copartnership, as the younger man could give close attention to the office, while the elder maintained a close supervision over the factory. The business grew, and a modern plant, complete with all appliances, was erected. The plant has 10,000 feet of floor space, and employment is given to about fifty skilled workmen, some of whom have been steadily employed with this one house for thirty years. The product consists of all kinds of vehicle springs, but special attention is given to heavy wagon and truck as well as automobile springs. Daniel Delany died in 1897, and the business since that



DANIEL DELANY.

time has been conducted by his son, John M. Delany, who has fully maintained the reputation made by his predecessors.

CAPITAL REQUIRED TO ESTABLISH THE CARRIAGE BUSINESS.

Editor HUB:

DEAR SIR:—Can you inform me, or direct me to any one who can, on the following: About what capital would it require to run a carriage factory turning out about three thousand jobs a year; also how many hands it would require to produce the same, making only bodies and gear woodwork, and trimming, and about the cost of equipment of such a plant. Any information on the above will be thankfully received.

In response to the above inquiry we wrote one of the best informed men in this line in the country and received from him the following interesting answer:

Editor THE HUB:

DEAR SIR:—Answering yours of August 30, would say, first of all, if you are located so that you could purchase bodies, it would not pay to put in a full line of machinery to manufacture three thousand carriages a year. The cost of machinery to build that number of carriages a year would be just about the same as it would for 8,000 to 10,000; in fact the machinery would do the work of double that, if kept at work all the time. However, the wood working, blacksmith and trimming department machinery would cost, to equip a shop as economically as possible, from $12,000 to $15,000 outside of the engine and boiler. The number of men required would be about sixty.

The capital required would be, if you did a cash business, from $10,000 to $12,000. If you sold on time and did not discount your paper, multiply the length of time by the amount of production, as for instance, producing three thousand carriages a year would mean ten vehicles a day. Placing the selling price at $50 each would amount to $500 a day, or $13,000 a month, and if you sold on four months' time you can see the amount of capital required.

The capital would be in accordance with the value of the carriages produced. I base the $10,000 to $12,000 calculation on a valuation of $50 as the average price of each vehicle. Now this calculation is based on working 300 days a year. If your production had to be marketed in six to eight months, you will increase the amount of capital required in proportion as you decrease the number of working days per year.

The real facts, Mr. Editor, are these: That the value of the production and the rapidity of sales must be taken into consideration in all calculations in starting a business.

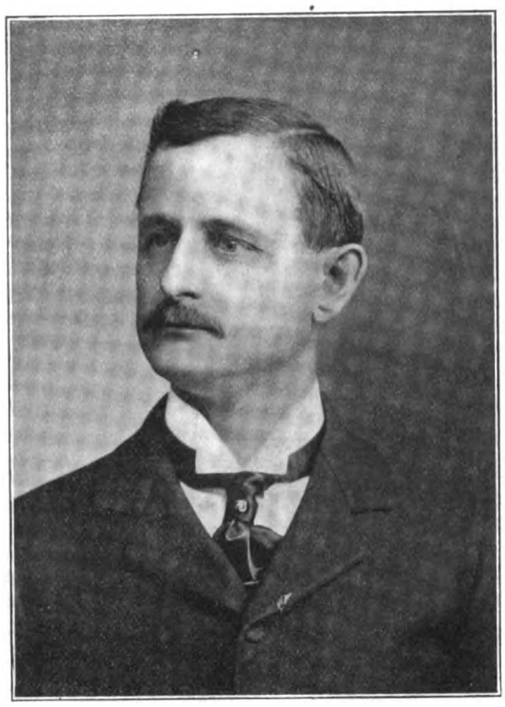
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OFFICIAL ANNOUNCEMENT OF THE C. B. N. A. OF THE UNITED STATES.

TWENTY-NINTH ANNUAL MEETING OCT. 22, 23, 24, 1901, CINCINNATI, O.

PROGRAMME.

THE business meetings will be held in the Assembly Room of the Grand Hotel, Central avenue and Fourth street, at 2 o'clock p. m. President F. B. Judkins will preside. Among the matters that will be brought to the attention of the convention will be: Report of the executive committee, report of the secretary and treasurer, report of the trustees of the technical school, an address by Mr. C. A. Green, of the Philadelphia Museums, on "Commercial Expansion";



F. B. JUDKINS, PRESIDENT OF THE CARRIAGE BUILDERS' NATIONAL ASSOCIATION.

an address by Mr. Henry P. Jones, of Newark, N. J., on "Wheels and Wheelmaking"; an address by Mr. C. A. Willey, of New York, on "Paints and Painting"; consideration of the recommendations of the executive committee, new business, election of officers for the ensuing year, selection of place for next annual meeting.

THE ANNUAL BANQUET

will be held on Thursday, October 24, at 7 o'clock p. m., in the Armory of the Ohio National Guard. For the accommodation of the members of the association, the secretary will be at Music Hall, exhibition room, on Tuesday, October 22; Wednesday, October 23, and Thursday, October 24, from 9 o'clock a. m. until 12 o'clock noon, and at the executive committee office, Grand Hotel, on Tuesday, October 22, and Wednesday, October 23, from 7 to 8 o'clock p. m., for the reception of new members, giving out banquet tickets, and such other business as may be required of him.

To prevent mistakes and misunderstanding, the executive committee has adopted the following rule: "Members of the association who desire their representatives to use their banquet tickets, must give an order for the same in writing, addressed to the secretary. The exhibition of materials will be held in Music Hall. The address of the secretary from October 17 to 26 will be the Grand Hotel, Cincinnati, O. Tickets for the banquet can be obtained from the secretary in Cincinnati.

EXCURSION TO THE MAMMOTH CAVE OF KENTUCKY, FRIDAY, OCT. 25.

The train will leave Louisville & Nashville Railroad station on Friday, at 1 o'clock p. m., arriving at the Cave the same evening at 6 o'clock. Returning, excursion will leave the Cave on Saturday evening at 9 o'clock, arriving in Cincinnati early Sunday morning. Tickets for the round trip, including all necessary expenses, $11.25. Members desiring to go on this interesting and profitable excursion will please write to Mr. W. H. McIntyre, Auburn, Ind. It is desirable that Mr. McIntyre know at once how many will join in this excursion, so complete arrangements can be made. This will be a delightful conclusion of convention week.

Officers Carriage Builders' National Association for year 1900-1901:

President—F. B. Judkins, Merrimac, Mass.

Vice Presidents—F. A. Ames, Owensboro, Ky.; C. G. Bosher, Richmond, Va.; H. A. Moyer, Syracuse, N. Y.; H. E. Miles, Racine, Wis.; M. D. Martin, York, Pa.; W. A. Paterson, Flint, Mich.; R. Edwin Joyce, Washington, D. C.; H. H. Timken, St. Louis, Mo.; Burton J. Westcott, Richmond, Ind.; G. H. Burrows, Rockville, Ont.; L. F. Weaver, San Francisco, Cal.; O. E. Short, New York City; D. M. Sechler, Moline, Ill.; J. E. Hayford, Newton, N. H.; J. Kauffman, Miamisburg, O.

Secretary and Treasurer—Henry C. McLear, Wilmington, Del.

Executive Committee—Daniel T. Wilson (chairman), New York City; Charles Arthur Carlisle, South Bend, Ind.; W. C. Durant, Flint, Mich.; Tom Connolly, Dubuque, Ia.; S. K. Page, New Haven, Conn.; Chas. F. Kimball, Chicago, Ill.; C. D. Firestone, Columbus, O.; D. M. Parry, Indianapolis, Ind.; E. W. M. Bailey, Amesbury, Mass.; Frank L. Wright, St. Louis, Mo.; Morris Woodhull, Dayton O.; W. W. Ogden, Newark, N. J.; F. B. Judkins (ex-officio), Merrimac, Mass.; Henry C. McLear (ex-officio), Wilmington, Del.

CARRIAGE BUILDERS' NATIONAL ASSOCIATION.

SECRETARY MCLEAR has sent out the following official paper to all members of the C. B. N. A., calling attention to the reduced rates of fare upon the certificate plan:

DEAR SIR—The "certificate plan" of passenger tickets, so called by the railway companies, consists in your payment of one full fare to the place of meeting of the convention, and your obtaining at the same time a certificate from the ticket agent at your home office certifying to that fact. The agent will give you such certificate on application; and this certificate, properly signed by the clerk and by special agent of the traffic associations or Central Passenger Association, will entitle you to a ticket for your return passage at one-third the regular rate. Be sure you get a certificate at your home office, when you buy your ticket. To prevent delay and disappointment, the railway companies ask that you make application for ticket at your home office at least thirty minutes before the time set for starting the train.

PLEASE OBSERVE.

First—Each person must purchase (not more than three days prior to the date of meeting or later than three days after the commencement of the meeting) a first-class ticket (either unlimited or limited) to the place of meeting, for which he will pay the regular traffic fare, and upon request the ticket agent will issue to him a certificate of such purchase (Form 2), properly filled up and signed by said ticket agent.

Second—If through tickets cannot be procured at the starting point, the person will purchase to the nearest point where such through tickets can be obtained, and there purchase through to place of meeting, requesting a certificate properly filled out by the agent at the point where second purchase is made.

Third—It is absolutely necessary that a certificate be procured, indicating that full fare has been paid for the going journey, and that the person is therefore entitled to the excursion fare returning. It likewise determines the route via which the ticket for return journey will be sold, and without it no reduction will be made, as the rule of the association is that "no refund of fare can be expected because of failure of the parties to obtain certificates."

Fourth—Tickets for the return journey will be sold by the ticket agents at the place of meeting at one-third the first-class limited fare only to those holding certificates (form 2), signed by the ticket agent at point where through ticket to place of meeting was purchased, countersigned by the secretary or clerk of the convention, certifying that the holder has been in attendance upon the convention, and vised by special agent of the railway association requiring the last named supervision.

Fifth—Tickets for return journey will be furnished only on certifi-

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cates procured not more than three days before the meeting assembles, nor later than three days after the commencement of the meeting, and will be available for continuous passage only; no stop-over privileges being allowed on tickets sold at less than regular unlimited fares. Certificates will not be honored unless presented within three days after date of the adjournment of the convention. It is understood that Sunday will not be reckoned as a day.

Sixth—Ticket agents will be instructed that excursion fares will not be available unless the holders of certificates are properly identified, as above described, by the secretary or clerk, on the certificate, which indication includes the statement that 100 or more persons, who have purchased full-fare tickets for the going passage, and hold properly receipted certificates, have been in attendance at the meeting, and by the stamp and signature of special agent of the railway association. A violation of the rules in certifying that the stipulated number were in attendance, when actually a less number of properly executed standard certificates were presented, will debar the offending organization from the further courtesies of this association.

Seventh—The certificates are not transferable, and the signature affixed at the starting point compared with the signature to the receipt, will enable the ticket agent to detect any attempted transfer. A transfer or misuse of certificates or tickets authorized under this rule will forfeit all privileges granted.

Eighth—Tickets can be procured threee days before the opening of the exhibition and during the first three days of the exhibition, that is from October 17 to 23, inclusive, and the certificates must be presented, and return ticket bought, within three days after the close of the exhibition.

N. B.—Please read carefully the above instructions, be particular to have the certificates properly filled and certified by the railroad agent from whom you purchase your going ticket to the place of meeting, as reduction on return will apply only to the point at which such through ticket was purchased.

THE RETURN TICKETS ARE NOT TRANSFERABLE.

To obtain this concession, this association is required to agree with the different passenger associations, to redeem at full price all tickets that are used by any but those who obtain the certificates to entitle them to the reduction on their return ticket, and therefore will be compelled, to protect themselves, to have a pledge from those holding these certificates, that they will not sell the ticket obtained on the certificate to any person or persons and those not members of the association, and who are not known to the clerk signing the certificate, must be vouched for by some member of the association before their return certificates can be signed.

This association is compelled to take this action so as to protect themselves from those who sell their certificates to scalpers or their agents, and thereby compel the association to pay full fare for the tickets thus sold by them.

This concession in rates covers all our members and their families.

All certificates must be given to the secretary or the agent of the passenger association, on the 23d, 24th and 25th of October, when they will be signed. They must be called for before one o'clock P. M. of 26th.

The office of the agent of the railroads will be in Music Hall, where the certificates will be signed.

Yours respectfully,

HENRY C. McLEAR, Secretary.

C. B. N. A. EXCURSION.

EXCURSION to the Mammoth Cave of Kentucky, Friday, October 25, 1901. The train will leave Louisville & Nashville Railroad Station on Friday, at 1 o'clock P. M., arriving at the Cave the same evening at 6 o'clock. Returning, excursion will leave the Cave on Saturday evening at 9 o'clock, arriving in Cincinnati early Sunday morning. Tickets for the round trip, including all necessary expenses, $11.25. Members desiring to go on this interesting and profitable excursion will please write to Mr. W. H. McIntyre, Auburn, Ind. It is desirable that Mr. McIntyre know at once how many will join in this excursion, so complete arrangements can be made. This will be a delightful conclusion of convention week.

WE have received a communication from M. Z. Patrick, chief industrial agent of the Seaboard Air Line Railway, at Pine Bluff, N. C., requesting us to ask readers of THE HUB to write him about his company's plan for giving floor space and power, free of charge, to those who want to start small manufacturing establishments.

C. H. A. T.

THE regular annual convention of the Carriage, Harness and Accessory Traveling Salesmen's Association will be held at the Grand Central Palace, Lexington avenue and Forty-third street, New York, on October 16 at 2 p. m. On the evening of the following day a banquet will be held at Delmonico's, Fifth avenue and Forty-fourth street, and the price per plate will be $4. Refreshments will also be served to the ladies, and it is hoped that they will be present in large numbers. The various committees are doing all in their power to make the C. H. A. T. banquet one of the finest of the season and one which will be pleasantly remembered for a long time, and it is hoped that every member of the C. H. A. T. will be present and will arrange to have several friends with him.

OFFICERS.

President—Walter D. Gregory.

Vice Presidents—Geo. W. Husted, N. D. Allen, Arthur Bittong, Jas. J. Fetzer, C. M. Fellows, B. F. Lounsbuery, Albert J. Schwartz.

Secretary and Treasurer—P. D. Randall.

Executive Committee—W. D. Colclough, W. A. E. Cummings, F. H. Gowen, L. H. Kronfeld, C. E. Perkins, W. H. Taylor, W. W. Wood.

The following committees have been appointed by the president:

COMMITTEE ON PUBLICITY:

G. Edgar Allen, chairman; L. H. Kronfeld, C. C. Hayes, W. D. Colclough, W. P. Nolan, Herbert Longendyke, B. F. Lounsbery and Col. E. W. M. Bailey.

COMMITTEE ON SPEAKERS:

W. W. Wood, chairman; W. A. E. Cummings, W. B. Templeton, Jas. Milburn, Jr., and W. J. Whitney.

COMMITTEE ON ARRANGEMENT:

W. H. Taylor, chairman; Wm. Rosenberg, W. F. Adams, Chas. C. Castle, and C. E. Perkins.

COMMITTEE ON PRINTING:

W. P. Mallon, chairman; F. C. Reynolds, Herbert O. Peters, Ralph Britton and W. W. Young.

COMMITTEE ON FINANCE:

F. H. Gowen, chairman; P. D. Randall, Jno. F. Calvin, W. J. Mills and C. M. Fellows.

The members of the executive committee are: W. A. E. Cummings, F. H. Gowen, L. H. Kronfeld, C. E. Perkins, W. H. Taylor, and W. W. Wood. Walter D. Gregory, president, and P. D. Randall, secretary and treasurer (ex-officio).

BUFFALO CARRIAGE AND WAGON BUILDERS' ASSOCIATION.

AT the regular monthly meeting of the Carriage and Wagon Builders' and Dealers' Association of Buffalo, held September 2, the following gentlemen were installed as officers for the ensuing year:

President, Robert Bosche; first vice-president, Henry Landsheft; second vice-president, Walter T. Smith; secretary, M. H. Rieman; treasurer, H. F. Shepert.

EXECUTIVE COMMITTEE:

Adolph Lalloz, Thos. Derry, A. J. Grad, Chas. Parkis, C. J. Handel, Jno. F. Vogt, Fred. Meyer, Fred. Wurster, and John Fisher.

The president announced the following committees:

MEMBER COMMITTEE:

Henry Justin, Jacob Hibburger, Geo. Engelhart, August Hess, and And. Peffers.

PRESS COMMITTEE:

D. F. Rieman, Jr., and A. W. Meyer.

ENTERTAINMENT COMMITTEE:

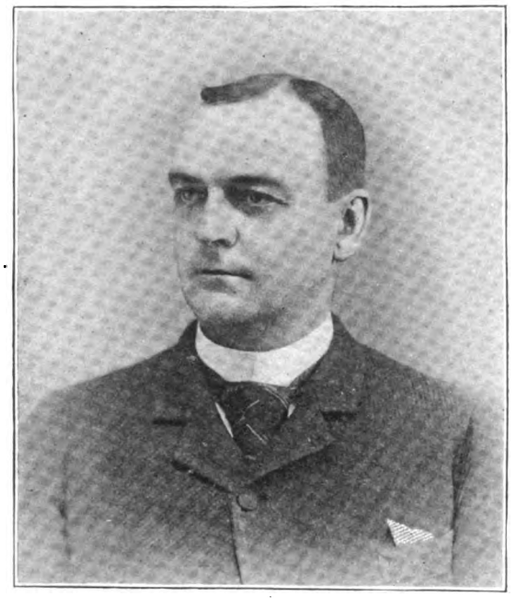
David Justin, Jas. M. Rose, W. P. Koehler, Aug. Eldring, Chas. Sudrow. Before the meeting adjourned, resolutions were adopted thanking the retiring officers for their faithful services, especially to the retiring president, Mr. Geo. Werner, to whom much of the success of the association is due. The association has now a membership of forty-eight, which includes nearly all the principal carriage and wagon builders of Buffalo.

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RETAIL CARRIAGE AND HARNESS DEALERS' PROTECTIVE ASSOCIATION.

THE meeting of the Dealers' Association, to be held this year, bids fair to be of more than usual interest, in view of the fact that an amendment to the Constitution and By-Laws will be offered, which will deal with the question of "The Catalogue House."

The meetings for business will be held daily, one meeting a day instead of two as heretofore.



V. T. VAN FLEET, PRESIDENT RETAIL DEALERS' PROTECTIVE ASSOCIATION.

The following programme has been arranged, and will be carried out substantially as printed, although it may be necessary to make some slight alteration before the opening of the convention. The official programme will, however, be printed in the "Guide to the Exposition," which will be printed and distributed among the attendants:

MONDAY, OCTOBER 14.

3:00 P. M.—Meeting of the Executive Committee.

TUESDAY, OCTOBER 15.

2:30 P. M.—General business session. All members with grievances will be given a hearing and complaints considered at this meeting, and action will be taken on the proposed amendment to the Constitution and By-Laws.

WEDNESDAY, OCTOBER 16.

2:30 P. M.—General business session. Continued investigation of complaints and election of officers.

THURSDAY, OCTOBER 17.

2:30 P. M.—Grand rally! All dealers, manufacturers and salesmen invited to a "big talk" and "smoker," to discuss the catalogue house evil and other topics of interest to the different branches of the trade there assembled.

All these meetings will be held in the convention hall and committee room on the fifth floor of the Grand Central Palace, and are easily and quickly reached by the elevators at all times.

All dealers, whether members of the association or not, are cordially invited to attend those meetings, as well as the "smoker" on Thursday afternoon.

HOW TO GAIN ADMISSION.

This exposition is for only those who are legitimately connected with the trade, and is absolutely free to all such. Every possible effort will be made to keep out consumers of vehicles and all those not entitled to receive dealers' prices, and every legitimate dealr in carriages who attends is requested to cöoperate with the management to that end.

Every person applying for admission will be required to enter his name in one of the registers provided for that purpose and placed in the lobby of the building. In addition to the name of the applicant, his town or city address, name of firm connected with and branch of trade will be required to be entered. Persons applying for admission can greatly facilitate matters by presenting their business cards (or a printed letter or bill heading) to the attendant of the register. A card will be issued to all those who satisfy the attendants that they are entitled to enter, which will admit the person whose name appears thereon at any time by simply showing it to the attendant at the door. Ladies will be admitted at all times without question.

Messengers will be stationed in the lobby at all times to deliver messages to any of the exhibitors from people not connected with the trade, or request such exhibitors to repair to the lobby to meet any visitor. This service will be free.

Arrangements have been made this year to have telephones placed on each floor of the exposition and a telegraph office will be located in the office of the managers—the Journal Publishing Co., of Troy—on the stage of the main exhibition floor, where will also be a long-distance telephone. It will not therefore be necessary to go outside the building to send a telephone or telegraph message to any part of the country.

Attendants of the convention and exposition may have their mail delivered to them in the building, if properly addressed. Letters and other mail matter should be addressed to the visitor's name, "care Journal Publishing Co., of Troy, Carriage Exposition, Grand Central Palace, New York, N. Y." It will then be delivered to the managers of the exposition, who will cause it to be placed on the table which occupies the center of the stage, where facilities for letter writing—pens, ink, writing paper and envelopes—will also be found. By occasionally visiting this table, visitors can ascertain if mail has been received there for them. A branch of the city postoffice is located in the Lexington avenue and Forty-fourth street corner of the building, where stamps and money orders may be obtained during the usual postoffice hours.

CARRIAGE MAKERS' CLUB.

THE first fall meeting of the Carriage Makers' Club of Cincinnati was held on September 12th at the Grand Hotel. About fifty gentlemen were present at the dinner, which was a most enjoyable one. The minutes of the last regular meeting were read and approved.

Mr. A. G. Brunsman, chairman of the C. B. N. A. committee, announced that his committee had plans under way to see that the body would thoroughly enjoy itself while in Cincinnati. Upon motion, duly seconded, the annual outing, which was postponed from July to October, was dispensed with, and *carte blanc* instructions adopted to give the C. B. N. A. committee, in conjunction with the regular entertainment committee, full sway in providing a suitable entertainment. The club, with a rising assent, voted a large donation for this purpose, and additional personal subscriptions will also be solicited from the trade, after which James Kelly, of the Crucible Steel Co. of America, addressed the meeting on steel, and Elmer Hess, of the Hess Spring & Axle Co., on springs and axles.

After the close of the programme the chair called upon P. C. Fosdick and W. G. Brown for remarks, which proved to be highly entertaining.

A musical programme during the dinner was thoroughly enjoyed.

Mr. Monteith moved that a committee of three be appointed to draft suitable resolutions on the disaster that threatens the nation by the fiendish attempt to assassinate President McKinley, after which the meeting adjourned.

AMERICAN VEHICLE WOODSTOCK ASSOCIATION.

THE American Vehicle Woodstock Association will hold an important meeting on November 6th and 7th at the Grand Hotel, Cincinnati, O., and all members of the association are expected to be present, as special business will be up for consideration.

A cordial invitation is also extended to all non-members who are manufacturers of rims, spokes, shafts or any of the kindred lines of vehicle Woodstock. Everybody interested in this line is requested to arrange to attend this meeting. Take notice of the time and place, and don't fail to be there J. E. BUSCHER, Sec'y.

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Automobile Department.

THE NEWPORT, R. I., AUTOMOBILE RACES.

(For illustrations see "Latest Styles.")

THE automobile races held at Aquidneck Park, Newport, on a half-mile track on August 30, under the management of the National Automobile Racing Association of Newport, afforded a good day's amusement to the friends of the automobile, of which there are so many at that fashionable summer resort. The short, D-shaped track, with but one straight stretch, made it almost impossible to speed to the limit, but it afforded a good opportunity to the thousands of spectators.

The races consisted of seven classes, for which prizes were offered as follows:

1. Tricycles and Two Wheeled Vehicles.—First Prize offered by Mrs. John R. Drexel; Second Prize offered by Mr. W. K. Vanderbilt, Jr.
2. Steam Propelled Vehicles.—First Prize offered by Mr. John Jacob Astor; Second Prize offered by Mr. John R. Livermore.
3. Electric Vehicles.—Prize offered by Mr. Alfred Vanderbile.
4. Special Class of De Dion Five Horse Power Voiturettes in Ordinary Running Trim.—First Prize offered by Mr. W. K. Vanderbilt, Jr.; Second Prize offered by Mr. H. O. Havemeyer, Jr.
5. Gasoline Vehicles not developing more than 12 Horse Power.—First Prize offered by Mrs. Herman Oelrichs; Second Prize offered by National Automobile Racing Association. Also a Special Prize, offered by Mr. Reginald Vanderbilt for winners among Winton Machines.
6. Gasoline Vehicles developing under 12 Horse Power.—First Prize offered by Mrs. W. K. Vanderbilt, Jr.; Second Prize offered by Mrs. Joseph Widener.
7. Winners in all Classes.—First Prize offered by Mrs O. H. P. Belmont; Second Prize offered by The Locomobile Company of America.

The opening event was for motor cycles and as the race was well contested, the onlookers were pleased and greeted the contestants for the second race with cheers. This was for electric vehicles and Mr. Wood had, practically, a walkover, as Messrs. Hatch and Stewart soon dropped out. The third race for steam propelled vehicles brought out four starters in the first heat. Two only, however, started in the second heat, these were Henry Howard and J. McMillan Hamilton, vice-president of the Automobile Racing Association. When nearing the finish, something happened to the Howard vehicle, which was in the lead, and he and his chauffeur were out of the seat like a flash, and before they could be overhauled by the other competitor, had pushed the now dead vehicle over the finish line amid all sorts of cheers and good natured jeers. But the plucky effort to win a steam automobile race by pushing it across the line failed, as the judges ruled that each vehicle must complete the event in which started under its own power. So the Astor Cup went to Mr. Hamilton.

The race for gasolenes developing more than twelve horse power was the event of the meet. Three heats were run. Th first was between Foxhall Keene and Mr. Bishop. Mr. Keene was attired in a long linen duster and a Panama hat, having anything but a racy appearance, while Mr. Bishop was in full racing rig. Keene got the start, and at the end of a half mile was seventy-five yards in the lead, an advantage which he continually increased, until when he had covered three and seven-eighths miles he had lapped his opponent, and at the finish was an easy winner by over half a mile.

In the second heat the contestants were Mr. Vanderbilt and Mr. Murray, of Pittsburg, the latter driving a Winton again t Mr. Vanderbilt's famous Mercedes. Mr. Vanderbilt, as usual, was first away, but for some time Murray held him, and it was not until two and a half miles had been covered that the German made began to pull away.

Mr. Vanderbilt got a good start with his red Daimler machine, but Mr. Murray was soon holding him surprisingly close. For two and a half miles the Pittsburg man clung to his rival, being only as far behind as the distance he had lost at the start. Then the red machine slowly opened up space, and Mr. Vanderbilt was a winner by about 125 yards. His time for the five miles was 7 minutes 43½ seconds, and Mr. Murray was only 4 4-5 seconds behind him under the tape, an insignificant difference in a contest between a $15,000 machine on one side and a $5,000 machine on the other.

The Special race for De-Dion five horse power voiturettes was much enjoyed, the machine owned by O. H. P. Belmont winning.

SUMMARY AS PUBLISHED BY "AUTOMOBILE TOPICS."

"Tricycles and two-wheeled vehicles (first prize cup offered by Mrs. John R. Drexel)—Won by Kenneth Skinner (De Dion). Second prize cup offered by Mr. W. K. Vanderbilt, Jr.—Won by G. M. Holly (gas bicycle). U. G. Scott (gas bicycle) did not finish. Distance, three miles. Time—5m. 40s.

"Electric vehicles (first prize cup offered by Alfred G. Vanderbilt)—Won by Allan Blanding. Lispenard Stewart (electric vehicle) and Dennison Hatch (electric vehicle) did not finish. Distance, three miles. Time not taken.

"Steam propelled vehicles—First heat: Won by J. McMillan Hamilton (locomobile); Baron Pierre de Moroques (locomobile), second; John Jacob Astor (Toledo), third. Paulding Fosdick (locomobile) did not finish. Distance, three miles. Time—6:25½. Second Heat: Won by John W. Howard (Howard); J. A. Mitchell (locomobile), second; Henry Howard (Mobile), third; Paul Demming (White), fourth. Distance, three miles. Time—6:20. Final heat (first prize cup offered by Mr. John Jacob Astor): Won by J. McMillan Hamilton. John W. Howard was disqualified.

"Gasoline vehicles not developing more than twelve horse power—First heat won by F. Walsh (gasmobile); F. H. Benedict (gasmobile), second. H. L. Willoughby (autocar) did not finish. Distance, three miles. Time—6:06¼. Second heat won by Alexander Fisher (gasmobile); Louis Stern (Panhard), second. George McFadden (gasmobile) did not finish. Distance, three miles. Time—6:45. Third heat won by E. Gray Dinsmore (Panhard) by default. Fourth heat won by C. Macey (gasmobile); James L. Breese (Panhard) second; I. T. Burden, Jr. (autocar), third. Distance, three miles. Time—6:17¼. Fifth heat won by Kenneth Skinner (De Dion) by default. Final heat—First prize, cup offered by Mrs. Herman Oelrichs, won by Alexander Fisher; second prize, cup offered by the National Automobile Racing Association, won by E. Gray Dinsmore. C. Macey did not finish. Distance, five miles. Time—9:37.

"Special class for De Dion five-horse power voiturettes—First prize, cup offered by W. K. Vanderbilt, Jr., won by Oliver H. P. Belmont; second, cup offered by H. O. Havemeyer, Jr., won by W. K. Vanderbilt, Jr.; Kenneth Skinner, third. Augustus Jay and John R. Livermore did not finish. Distance, three miles. Time—7:35¼.

"Gasoline vehicles developing more than twelve horse power—First heat: Won by Foxhall Keene (Mors); David Wolfe Bishop (Mors), second. Distance, five miles. Time—8:02. Second heat—Won by W. K. Vanderbilt, Jr. (Daimler); William N. Murray (Winton), second. Distance, five miles. Time—7:43½. Final—First prize, cup offered by Mrs. W. K. Vanderbilt, Jr., won by W. K. Vanderbilt, Jr.; second, cup offered by Mrs. Joseph Widener, won by Foxhall Keene. Distance, five miles. Time—7:36½.

"Championship for winners in all classes—First prize, cup offered by Mrs. O. H. P. Belmont, won by W. K. Vanderbilt, Jr.; second, cup offered by the Locomobile Company of America, won by Kenneth Skinner: Alexander Fisher, third. J. M. Hamilton and O. H. P. Belmont did not finish. Distance, ten miles. Time—15:23½."

FOREIGN AUTOMOBILE EXPOSITIONS.

THORNWELL HAYNES, consul at Rouen, writes under recent date: "The Fourth International Automobile, Cycle and Sports Exposition is to be held in the Grand Palais, Paris, December 10 to 25, 1901. The condition of entry is generally the same as was in force during the last exposition, with the exception that the price of space, which remains the same in the nave of the building, will be diminished in the less favored localties. There will be the following classification:

"Automobiles, motocycles, and all vehicles of mechanical traction, cycles of all kinds, material for the construction of automobiles and cycles, tires, detached pieces, accessories, motors, navigations, aerostatics, miscellaneous sports and touring, body work for automobiles, automobile and cycle costumes, inventions, automobile and cycle literature and photography.

"The president of the committee of organization is M. Gustave Rives. Letters will reach him addressed in care of the Automobile Club of France, Hotel Plessis-Belliere, 6 Place de la Concorde, Paris.

"The Holland Industrial Cycle and Automobile Association has organized an international exposition for the month of February, 1902. It will be held at Amsterdam."

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THE AUTOMOBILE FIVE HUNDRED MILE ENDURANCE RUN.

(For illustrations see "Latest Styles.")

THE 500 mile endurance run, starting from New York City, which was to have terminated at Buffalo, N. Y., was officially ended at Rochester, N. Y., owing to the assassination of President McKinley. It was begun under the most favorable circumstances; eighty-one started when the word was given. The route lay up Fifth avenue to One Hundred and Eleventh street, then to Seventh avenue to One Hundred and Fifty-fourth street, thence to Central Bridge and out Jerome avenue to Broadway and Yonkers. That city, Hastings, Dobbs Ferry, Irvington, Tarrytown, Ossining, Croton and Oscawana were passed in turn. The end of the first stage was Peekskill.

Many of the most prominent automobilists in the country took part, and as a very large majority of the machines were of American manufacture, it gave the best opportunity ever yet offered to test the value of our home products.

There are to be three awards; first-class certificates for an average speed of from thirteen to fifteen miles per hour; second-class certificates for from ten to twelve miles an hour, and third class certificates for from eight to ten miles an hour. First to enter the noon control at Peekskill was Bradford B. McGregor, at 10:18 A. M. He made the run of forty-four and one-half miles in two hours, and fourteen minutes. John R. Flagler followed with two hours and twenty-three minutes to his credit. A. R. Shattuck, president of the Automobile Club of America, was third, finishing in two hours and twenty-nine minutes.



LINING UP IN NEW YORK FOR THE START.

Start after luncheon was made as nearly after 1 o'clock as the contestants could get their machines ready. Many of the onlookers gathered on Nelson Hill, just outside of Peekskill, to witness the special event of the day—the hill climbing contest. This hill exceeds in grade and length any on the run, being 2,373 feet long with a rise of 226 feet. The Automobile Club had five stout teams of horses in readiness to haul to level ground any machine with horse power insufficient to make the climb.

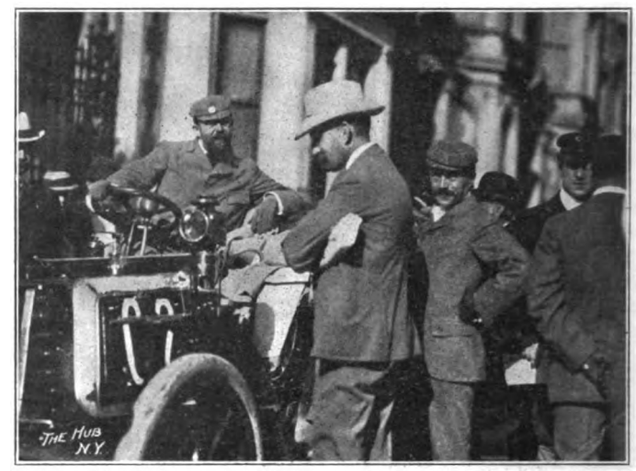
David Wolfe Bishop, in a thirty horse power gasoline vehicle, made the record time of two minutes and thirteen seconds. His machine was in Class C, weighing nearly 30,000 pounds. The winner in Class A was a vehicle owned by Grout Brothers, of Orange, Mass., which went up the hill in two minutes and forty-five seconds. The winner in Class B was William Morgan, of Ardmore, Pa., with a record of two minutes and seventeen seconds.

The afternoon stage led the participants through Annsville, Garrisons, Cold Spring, Glenham, Fishkill Landing, Hughsonville, Wappinger Falls to Poughkeepsie.

The first four to reach Poughkeepsie were A. L. McMurtry, Bradford B. McGregor, G. W. Bishop and J. M. Satterfield. All were in gasoline vehicles. Out of eighty-one starters seventy-five had passed the night central station at Poughkeepsie at 9:30 p. m., which qualified them for the next day's event.

The start for the second stage of the run was made at 8 A. M. The run to Albany was somewhat eventful, and some of the most expert operators met with mishaps which, while damaging the machines, inflicted no serious personal injuries.

Fifteen contestants reached Albany before the opening of the night control at 3:35. David Wolfe Bishop, Bradford B. McGregor, Dr. T. J. Martin and A. R. Shattuck and Hiram P. Maxim were among the first. Of the seventy-one contestants in at Poughkeepsie last night sixty-five were reported at Albany before 9:20, the time of closing the night control.



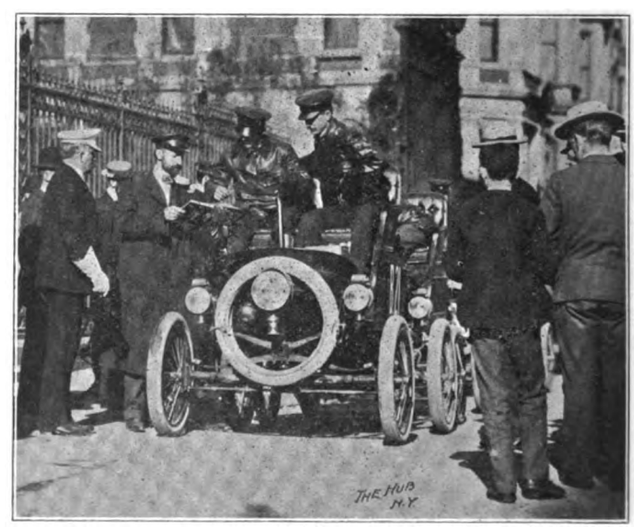
EXPERTS IN CONSULTATION.

The third day's trip was from Albany to Herkimer and proved to be a most trying one. The roads were muddy and heavy showers added much to the discomfiture of the contestants. Speed was impossible; the roads, even at their best, are poor, and when rendered muddy by heavy rains, were almost impassable and naturally there were many mishaps to the machines. Of the sixty-seven machines that left Albany fifty reached Herkimer in the time limit, but the run was one that ended the illusion that this endurance run was a pleasure trip.

The fourth day's run was from Herkimer to Syracuse. The roads were muddy to an extreme and the threatening clouds gave assurance of a rainy day. Many of the operators were well nigh worn out by the three days' ride and the loss of rest owing to the making of repairs during the previous night. Scarcely a machine had escaped an injury of some kind.

At 8 o'clock sharp the signal was given for a start, and notwithstanding the generally mud covered condition the start was an interesting one.

Long before the start from Herkimer for the morning run to Oneida the rain fell with a constancy that elicited many expressions of disgust and discouragement from those who realized too well in what condition another downpour would leave the roads, already swollen from two heavy falls of rain. As the machines advanced on the morning stage the storm increased in fury, and some of the steam vehicle operators had difficulty in keeping their fires going.



SIGNING THE REGISTER.

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Heavy ruts formed in the roads and machines weighing less than a thousand pounds were thrown out of their path continuously. The heavier machines fared better.

The clay roads added to the danger. The clay formed a slippery mixture. Steering gears and tires proved most susceptible to the heavy morning travel, and contestants who had escaped mishap on previous runs succumbed to tire troubles in to-day's morning stage.

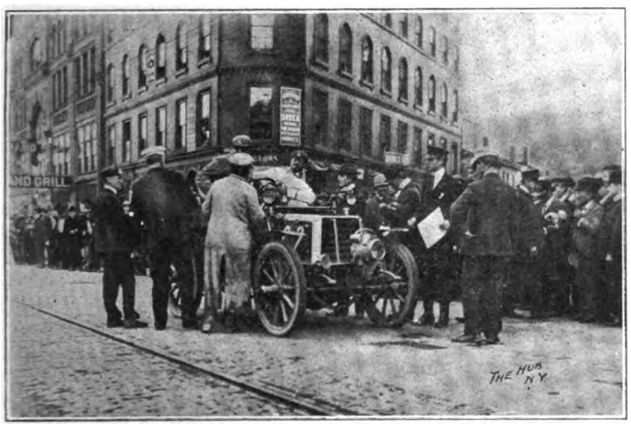
There were many mishaps and but forty-eight machines reached Syracuse before 9:30 P. M., notwithstanding this was the shortest day's run since leaving New York.

David Wolfe Bishop finished first at Syracuse, having made the trip from Oneida, where the afternoon start was made, in one hour and thirty minutes.

Other early arrivals in Syracuse were M. R. Hughes, M. H. Winters, B. H. Deming, C. A. Benjamin, all steam carriages, and F. A. Law, in a Columbia gasoline.

In the evening a dinner was given at the Syracuse Club by the Automobile Club of Syracuse to a number of members of the Automobile Club of America. Those present included President Shattuck, Winthrop E. Scarritt, Harlan W. Whipple, David Wolfe Bishop, Edgar and Elmer Apperson, Charles M. Warner, Dr. T. J. Martin, president of the Buffalo Automobile Club; Elliott Evans, secretary of the Buffalo Automobile Club, and Chester M. Elliott.

The fifth day's run was from Syracuse to Rochester, with Lyons as a noon relay. The total distance is 87 miles, making this the longest one day's run. The start was made at 8 o'clock a. m. The roads were better than those which were run over during the three preceding days, and the machines were grouped together on reaching Lyons more than on any preceding relay. The afternoon run



CHECKING IN AT SYRACUSE.

to Rochester was over poorer roads and as a result there were many stragglers, and but forty-one machines reached that city when time came to call the roll.

Owing to the assassination of President McKinley the contest committee of the Automobile Club of America decided to terminate the run at Rochester and at 7 a. m. posted a notice to that effect, also a notice that "Certificates will be issued for the performance of each carriage for the five days of the run."

The vehicles that took part in the run were made by the following manufacturers: Robinson Motor Vehicle Co., Hyde Park, Mass.; Panhard-Levassor, Paris, France; Ward Leonard Electric Co., Bronxville, N. Y.; Haynes-Apperson Co., Kokomo, Ind.; Stratton Motor Bicycle Co., New York City; the George N. Pierce Co., Buffalo, N. Y.; Clement, Paris, France; White Sewing Machine Co., Cleveland, O.; Overman Automobile Co., New York City; Baldwin Motor Wagon Co., Providence, R. I.; Holyoke Automobile Co., Holyoke, Mass.; American Bicycle Co., Toledo, O.; Winton Motor Carriage Co., Cleveland, O.; Ohio Automobile Co., Warren, O.; the Autocar Co., Ardmore, Pa.; Lane Motor Vehicle Co., Poughkeepsie, N. Y.; Automobile Co. of America, New York City; St. Louis Motor Carriage Co., St. Louis, Mo.; Foster Automobile Manufacturing Co., Rochester, N. Y.; Locomobile Co. of America, New York City; Haynes-Apperson Co., Kokomo, Ind.; F. B. Stearns & Co., Cleveland, O.; Grout Bros., Orange, Mass.; Daimler Manufacturing Co., Cannstatt, Germany; Geneva Automobile & Manufacturing Co., Geneva, O.; Searchmont Motor Co., Philadelphia, Pa.; Stearns Steam Carriage Co., Syracuse, N. Y.; Milwaukee Automobile Co., Milwaukee, Wis.; Electric Vehicle Co., New York City; Duryea Power Co., Reading, Pa.; Waltham Manufacturing Co., Waltham, Mass.; Century Motor Vehicle Co., Syracuse, N. Y.; Ward Leonard Electric Co., Bronxville, N. Y.; Hendee Manufacturing Co., Springfield, Mass.; De Dion-Bouton Motorette Co., Brooklyn, N. Y.; Steam Vehicle Co. of America, New York City; E. R. Thomas Motor Co., Buffalo, N. Y.

SECOND ANNUAL AUTOMOBILE SHOW.

THE second annual Automobile Show will be held in the Madison Square Garden during the week of November 2 to 9. It is proposed to make this second show much more complete than the first, which was more or less in the nature of an experiment, and the Automobile Club of America was a novice in the field. This time all of the space in the Garden will be utilized for exhibits, and the spectators will have a much better opportunity for examining the machines on exhibition. Automobile manufacturers have taken a great stride in the last year, and the character of the vehicles to be shown promises to be remarkable, not only in lightness of construction, in ability to go a distance, in comfort and in speed, but in richness of appearance. The entire floor of the Garden has been taken for automobiles exclusively, while the overflow and the highly interesting exhibit of the Automobile Club, which will be much more so this year, will be in the restaurant. All of the space has been taken and the manufacturers in this and other countries will be represented. The show promises to be a feature of the winter season, and that the representative makers will be there may be seen from the following list of intending exhibitors:

Mobile Co. of America, Winton Motor Carriage Co., Electric Vehicle Co., Baker Motor Vehicle Co., Peerless Manufacturing Co., Locomobile Co. of America, Autocar Co., Automobile Co. of America, Overman Automobile Co., Haynes-Apperson Co., American Bicycle Co., De Dion-Bouton Motorette Co., the George N. Pierce Co., Pan-American Motor Co., United States Long Distance Automobile Co., Knox Automobile Co., Geneva Automobile & Manufacturing Co., Automotor Co., Desberon Motor Car Co., Holland Automobile Co., Century Motor Vehicle Co., Ward-Leonard Electric Co., Ohio Automobile Co., D. B. Smith & Co., Duryea Power Co., Steamobile Co. of America, Foster Automobile Manufacturing Co., Lane Motor Vehicle Co., Loomis Automobile Co., Diamond Rubber Co., Jos. Dixon Crucible Co., Charles E. Miller, Janney, Steinmetz Co., Dow Portable Electric Assistant Co., New York Belting & Packing Co., Gleason-Peters Air Pump Co., Midgley Manufacturing Co., R. E. Dietz Co., American Ball Bearing Co., John Simmons Co., Goodyear Tire & Rubber Co., Buffalo Gasoline Motor Co., Shelby Steel Tube Co., Vehicle Equipment Co., Hydra Double Battery Co., International Automobile & Vehicle Tire Co., Rose Manufacturing Co., Munger Vehicle Tire Co., Gray & Davis, B. F. Goodrich Co., Veeder Manufacturing Co., Automobile Supply Co., Grant-Ferris Co., Baldwin Cycle Chain Co., Consolidated Rubber Tire Co., Porter Battery Co., Metallic Rubber Tire Co., Badger Brass Manufacturing Co., Hartford Rubber Works Co., Robinson Motor Vehicle Co., Searchmont Motor Co., Crest Manufacturing Co., Upton Machine Co., and Standard Welding Co.

FIRST ANNUAL AUTOMOBILE EXHIBITION.

THE first annual automobile exhibition, under the auspices of the Chicago Automobile Club and the National Association of Automobile Manufacturers, will be instituted in the Coliseum Building, Chicago, March 1st to 8th inclusive, 1902. It is noteworthy that this will be the first exhibition in which the National Association of Automobile Manufacturers will be associated and interested. The inauguration and conduct of the show will be practically on the lines of the automobile exhibition held at the Coliseum last year. Plans and details are being prepared and will be distributed in the course of a few days.

The Coliseum affords exhibition space and facilities the magnitude of which is not excelled by any building of its character in the United States. Its capacity has recently been augmented by the addition of an annex 75 x 175 feet. It was the scene of the first indoor automobile exhibition held in Chicago in March, 1900, when the facilities of the building for an exhibition of this nature were fully tested and satisfactorily met. The management and the commercial advantages of this show were uniformly commended by the exhibitors. With the facilities commanded, and the united efforts of the leading automobile club of the West and the Manufacturers' Asso-

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ciation it is believed that the exhibition will be unqualifiedly successful.

Mr. S. A. Miles, who managed last year's exhibition, will assume the general direction of the show which will be instituted on March 1st next, and which it is believed will receive the cordial support of the manufacturing interests of the city of Chicago and general public, assuring an exhibtion creditable alike to the trade, the club and to the Manufacturers' Association.

Edwin F. Brown, W. B. Sargent, F. C. Donald (chairman), show committee of Chicago Automobile Club.

STEARNS' STEAM CARRIAGE CO.

George M. Barnes, vice-president of the Stearns Steam Carriage Co., was seen by our representative to-day, and was greatly pleased with the showing that the Stearns carriage made in the endurance contest. The machine covered the distance from New York to Rochester, 394 3-10 miles, in 32 hours and 21 minutes. He says the run for the first four days could not have been better under the conditions that existed. Not a minute's time was lo t during the entire trip until after leaving Syracuse. The Stearns carriage was at the control Friday morning ready for the day's run. After leaving the city and getting about two miles out, the steam pressure dropped very suddenly. Mr. Trebert, who was operating the machine, discovered instantly that the boiler had been scorched. This was caused by a defective check valve in the water glass connection giving a false water gauge. The accident caused a delay of seven hours. At 3:10



STEARNS AUTOMOBILE IN THE 500 MILE ENDURANCE RACE.

in the afternoon Messrs. Trebert and Griffin started on their journey to Rochester, reaching Lyons at 7:05 and Rochester at 11:30 p. m. What pleases the Stearns people is the fact that they had but one carriage entered and that it was unnecessary for them to have an army of mechanics along the line to keep the carriage in running order.

In the hill climbing contest the Stearns carriage made the second best time in Class B, covering the distance in four minutes and two seconds.

Mr. Barnes was amused in looking over the result of the contest to note that a great many of the contestants were boasting about reaching Buffalo, some of these people having missed from one to six controls along the line. This company was unable to secure suitable space in Madison Square Garden for the coming show. They, however, will be on hand with a complete line of their product. Their machines will be under steam in the vicinity of the Garden so that the public can have an opportunity of trying them out on the road.

DURYEA POWER CO.

The Duryea Power Co., Reading, Pa., have forwarded us one of their new catalogues, saying that they regard this as the opening of next year's business. Their prices and designs will remain as they are now until the next year's rush of business is over. Their present devices have been thoroughly tested and no changes of any consequence are being made for another year. In fact, their motor and driving mechanism are of the same design used by them since 1897, and purchasers run no risk of buying experiments, as often happens where radical changes are made. They express pleasure in the fact that the motor vehicle trade is working toward multiple cylinders, light weight, long wheel base and low center of gravity, which features they have advocated for a long time. They are also pleased to note that the more experienced drivers are inquiring for large powered vehicles with great hill climbing and rough roads' capacity and of simple construction, regardless of price, which action we look upon as quite favorable to the motor vehicle business.

A REPORT CONTRADICTED.

The following letter from the American Bicycle Co. (automobile department), is published as that company's unqualified contradiction regarding their machine:

Toledo, O., Sept. 26th, 1901.

The Hub, New York, N. Y.:

Gentlemen:—We do not wish to enter into any controversies regarding our vehicle or the results of the Buffalo contest, but trust that we may be pardoned for calling your attention to partisan misstatements published recently in the columns of a contemporary by the operator of another make of carriages. We refer to the statement that an engine of a Toledo carriage dropped out at Fonda, N. Y., and that trouble was experienced by "the blowing out of a plug in the steam line"; also that the "air pipe snapped off by striking the frame."

Such partisan misstatements, in which the wish seems plainly father to the thought, can do no good to anyone concerned. At the risk of seeming to dignify a falsehood, we wish to emphatically deny any of the accidents referred to. A Toledo engine did not drop out on any part of the trip; no "plug blew out of a steam line," as there is no such device employed in the construction of the Toledo. Neither did the air pipe snap off, as can well be believed when it is stated that this is a piece of rubber tubing.

Regarding the result we have not very much to say beyond that we have experienced considerable pride in the performance of the Hydro-car and the Toledos in this contset. All were standard stock carriages and unaccompanied by repair wagons and troups of mechanics. Yet they reached Buffalo safely and without being rebuilt on the road. The Hydro-car reached Buffalo less than a half hour behind Mr. Bishop's Panhard, having left Rochester fifteen minutes later, and was the second carriage to reach the Pan-American city. The two Toledos were the first of the steam carriages to arrive. Any one of these carriages, without refitting, is quite capable of going over the route again without the dread of break downs.

Thanking you in advance for whatever publicity you may give this correction, we beg to remain

Yours respectfully,

American Bicycle Co.
(Automobile adv. dept.)
Per W. C. Stuart.

AUTOMOBILE RACE MEETS.

From all over the country come announcements of race meets for automobiles. Reports also indicate that special tracks will soon be ready for this most exciting form of racing. Already the names of the gentlemen who will build such a track on Long Island are announced, and tracks already in existence in other places are being banked for "mile a minute" work.

On the 10th of this month, over a one mile banked track in the Detroit Driving Club's Park, Detroit, Mich., the following events were run: No. 1, 5-mile race, for steam machines; No. 2, 1-mile, open to all, weight limit 1,500 pounds; No. 3, 1-mile, electric machines; No. 4, 10-mile, open to all, weight limit 1,000 pounds; No. 5, obstacle, open to all; No. 6, 10-mile, open to all, weight limit 2,000 pounds; No. 7, world's championship, 25 miles, open to all.

Automobile racing associations have been formed in nearly all the large cities, and as the sport is new the rules and regulations are very crude. Comparison of experiences and results will, however, bring out a more complete and uniform code, and the data of these events will then become valuable.

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SEARCHMONT MOTOR COMPANY.

Mr. W. D. Gash has severed his connection with the Waltham Manufacturing Co., where he has been acting in the capacity of business manager, to accept the position of sales manager with the Searchmont Motor Co., of Philadelphia, thus adding another prominent and successful business man to the already formidable staff of this company. The Searchmont Motor Co. for the past year has been devoting its efforts, almost exclusively, to the perfecting of their product, and in consequence they have organized one of the largest and best equipped automobile factories in America, and their vehicles rank second to none.

Up to the present time, however, little or nothing has been done in the direction of selling, as the company has preferred to wait until such time as they could, with confidence, fully guarantee their own product. This time having arrived, and as the carriages are coming through the shop in good shape, the next proposition presenting itself was the selection of a sales manager. After looking over the entire field of those whose business experience, tact and mechanical ability would fit them for the place, Mr. W. D. Gash was selected as the man most eminently suited for the position. Mr. Gash became associated with the Waltham Manufacturing Company some five years ago as manager of their Chicago branch. From there he was transferred to Boston in charge of the company's business in that district. His next position was that of special travelling man with head-quarters at Waltham, and from this position he was promoted to that of general manager of the Waltham company, having had, under President Metz, full charge of their business for the past two years.

Mr. Gash has only been with the Philadelphia company a few days, so that no statement of the future policy of the Searchmont Motor Company could be obtained for publication in this issue. A full statement has been promised, however, which will be published in a subsequent issue.

NEW PUBLICATIONS.

"The Construction of a Gasoline Motor Vehicle" is the title of a work by C. C. Bramwell, published by Emil Grossman & Bro., New York. The author has taken the work up in detail, treating each specific part, and by the aid of clear cut drawings places his matter before the reader in an interesting form, and so clear that readers can form a good conception of what the gasoline engine is, its power and possibilities. It is interesting to note that while the book is not a large one, it represents the cream of the information picked up by Mr. Bramwell in six years of study and experimental work. Part of this time was spent abroad in familiarizing himself with the principle employed by the foreign manufacturers, thus permitting of an intelligent comparison of the various styles of machines. The price is $2 and it is certainly worth that sum to any man interested in mechanics.

SPECIAL ANNOUNCEMENT.

I. A. Weston Co., Syracuse, N. Y., desire to notify their customers and trade that they have purchased of the Jamesville Manufacturing Co., Jamesville, N. Y., their factory, machinery, etc., and hereafter the business of manufacturing the following named articles will be conducted under their name and management:

For Carriages: Complete ball bearing gear forgings, ball bearing steel wheels, ball bearing bushings for wood wheels, ball bearing axles and attachments, ball bearing sulky wheels and steel rims.

Automobiles: Ball bearing steel wheels, ball bearing hubs and plain bearings, steering devices, and steel rims.

Bicycles: Champion hubs with K. O. axles, Vulcan hubs with K. O. axles, steel wire wheels, Champion 14 ounce racing hubs, and spokes and nipples.

Factories, Syracuse, N. Y., and Jamesville, N. Y.

AUTOMOBILES FOR FIRE CHIEFS.

The fire department of New York City is to provide its chief and his assistants with electric automobiles. Five vehicles are now being constructed, and will be in use some time this fall.

SAFETY STOP FOR AUTOMOBILES.

Arthur L. Stevens, of New York, has invented a device for use on automobiles to cut off the power automatically should the device be thrown from seat. In the case of an electric vehicle the wires leading from the battery to the motor pass through an automatic switch, located in the driver's seat, the switch remaining closed as long as the driver is seated, and opening the instant he rises or is thrown.

AUTOMOBILES ON THE DESERT.

The automobile has invaded the desert of Sahara. Several Frenchmen have made trips recently through a large part of the waste country in Southern Algeria with such success that the French government has officially undertaken a series of tests. A request for a regular service of control and revictualing has resulted. The government plans to connect the various oases by regular lines of automobiles. The experiments made have shown that gasoline automobiles can far outdo the camel as a means of transportation in dry countries. Trips of 500 miles in length can be accomplished without great difficulty. Twenty miles an hour is attained in many parts of the desert, and the best speed of the camels can be practically doubled anywhere. Besides this, high temperatures have no effect on the running of the machines, and the amount of goods that can be carried is largely in excess of a camel's load.

FOREIGN TRADE IN AUTOMOBILES BRISK.

Of the manufacture of automobiles there seems to be no end at the present moment, for, although the dealing trade is slackening down, the manufacturers are busier than ever, and it is with difficulty that they can keep up with their customers' demands for the autumn season. If ever there was a trade of mushroom growth it is that of the automobile. To a *Herald* correspondent yesterday the Marquis de Dion, of De Dion and Bouton motor fame, said: "Never since its advent has the automobile been in such demand as now. Why, we are doing over a mililon francs business per month, this amount being made up as follows: One hundred and seventy voiturettes at an average of 4 800 francs each, 400 motors and 200,000 francs worth of detached pieces. We sell to all countries, and our export business at present is enormous. I can frankly say that our output can be estimated at 12,000,000 francs per annum. Of course, we have heavy expenses, but these figures show how the wind blows." From MM. de Dion & Bouton's immense factory, at Puteaux, to that of MM. Panhard & Levasser, at Ivry, is a long journey. At the latter place I found M. René de Knyff over head and ears in work. "Only have five minutes to give you," he said. "Trade? Why, magnificent. Since the Paris-Berlin race we have received orders for machines to the value of 5,000,000 francs, and still they come. These, with a few exceptions, are from seven to thirty horse power, and are for all countries. We are now making two for the King of Italy, and Mr. Harvey du Cros, our London agent, cannot get his orders filled fast enough. The present price of our racing machines is about 45,000 francs, but at the same time we are turning out a cheap but well made light carriage for 7,000 francs.

"Do I believe in the future of the automobile? Certainly. There is an enormous future in the trade, and France, as in the past, will have the biggest share. We now employ 1,200 workmen, and are making fully 100 machines per month. With the execption of the pneumatics and the upholstering, everything is manufactured on the premises, and each independent piece of mechanism is thoroughly tested before it is fitted. Talking of pneumatics, by the way, reminds me that Michelin's cannot keep up with the demand, and, although rubber is now cheaper, their tires are at a premium.

"In speaking of the future of the automobile, my experience has been that each newcomer makes, if not two, certainly one proselyte. The rage for speed is diminishing, and 'chauffards', thank goodness, will soon be rare. In commercial interests it is necessary to have races from time to time, but they must not be exaggerated. To find out which is the fastest horse in a country there must be a race, and so it is with automobiles. The best makers are nearly always to the fore." That MM. Panhard & Levassor possess one of the "best horses" is certain, for they have continued to pull down their barns and build greater, until they have made at Ivry a little city of their own, almost as large as MM. de Dion & Bouton's magnificent works at Puteaux.—From the European edition of the *Herald*.

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TORONTO EXPOSITION AND INDUSTRIAL FAIR.

SEE ILLUSTRATIONS IN "LATEST STYLES."

THE great annual fair, held at Toronto, Canada, is the one great event of its character in the Dominion, and takes rank among the largest in the world. That it has a great hold upon the people of Canada may be inferred from the fact that the individual entries this year, numbered over three thousand five hundred, embracing agricultural products, cattle, horses, sheep, swine and manufactured goods in great variety and for almost every purpose, prominent among which was carriages, wagons, carriage materials, bicycles, etc., also automobiles and materials. The following exhibitors showed vehicles:

The Adams Wagon Co., Ltd., of Brantford, showed twelve jobs comprising farm, business, truck and other heavy wagons; in charge of J. A. Sanderson, T. Waugh and F. P. Piper.

J. B. Armstrong Manufacturing Co., Ltd., Guelph, Ont., showed twenty-two jobs, seven of which were cutters; R. L. Torrance, A. Summers, J. G. Challies and T. W. Dryden in charge.

The Bain Wagon Co., Woodstock, Ont., John D. Bain in charge, exhibited four farm wagons.

J. J. Cameron, Vellore, Ont., exhibitied a line of Cameron's road cars with the manufacturer's patent shaft attachment.

The Canadian Rubber Co., of Montreal, agents for the Dunlap tire, showed a line of these tires. A feature of the exhibit was an eleven foot wheel with a nine inch tire. W. A. Shaw had charge.

The Chatham Manufacturing Co., Chatham, Ont., showed six farm wagons; A. E. Merritt in charge.

D. Conboy, Toronto, manufacturers of carriage trimmings and tops, showed fifteen bodies with tops attached; W. C. Conboy and C. Shire had charge.

C. Collett, Toronto, exhibited a butcher wagon and a runabout. Mr. Collett was present and on the lookout for interested parties.

J. A. Darch, of Toronto, manufacturer of carriages and wagons, showed seven pleasure vehicles, himself doing the honors of the occasion.

Gardner & Oakley, Toronto, builders of fine carriages and wagons, had two pleasure vehicles and a baker's wagon on exhibition; Mr. Gardner in charge.

Guelph Carriage Top Co., Guelph, Ont., had fifteen vehicles on the floor, four of which were cutters; also a line of carriage hardware and trimmings. John Mitchell and A. S. Foster explained their merits.

The William Gray & Sons' Co., Chatham, Ont., had fifty-three vehicles on view, thirteen of which were cutters. This big exhibit was looked after by Messrs. M. Daniels, J. A. McKeon, W. W. Stevenson, E. M. Engrane, Robert and James Gray and M. Polson.

A. B. Greer, of London, Ont., builders of carriages, light and heavy, and hearses, showed twelve vehicles, one of which was a very neat and attractive hearse, with circular glass ends and coach boot.

E. N. Heney & Co., Montreal, had a line of twenty-one vehicles on view, eight of which were cutters; also a line of light and heavy coach, carriage and wagon harness; L. N. Morrison, agent for Ontario, in charge.

W. J. Hunter, Toronto, agent for the Kelly Springfield Rubber Tire Co., showed a line of these tires.

The Imperial Varnish and Color Co., Ltd., Toronto, had a good exhibit of their goods in charge of T. F. Moneypenny.

W. F. Johnson, Toronto, exhibited four business wagons, a butcher cart and two delivery wagons.

C. Kloepfer, Guelph, Ont., showed a line of carriage hardware and trimmings.

The McLaughlin Carriage Co., Oshawa, had the largest exhibit of vehicles in the show, forty-five jobs in all, twenty-one of which were cutters. These were cared for by Messrs. M. C. Rose, Ed. Catudal, W. and W. N. Stephenson and Mr. Latimer.

The Ontario Pole & Shaft Co., Toronto, showed a line of carriage poles and shafts; G. A. Landon, manager, in charge.

D. P. Sheerin, Toronto, agent for the Durham Rubber Co., of Bowmanville, showed a line of rubber goods, tires, etc.

The Speight Wagon Co., Markham, Ont., exhibited two heavy wagons; C. W. Magunn and T. H. Speight in charge.

Vokes & McCurrah, Toronto, manufacturers of wagons and carriages, had a line of six business wagons on view, with Mr. McCurrah in charge.

The Walkerville Wagon Co., Ltd., Walkerville, Ont., exhibited eighteen vehicles, consisting of farm and other wagons. The interest of the company was looked after by James Bergin, James Dickson and F. Seamon.

NOTES BY A POPULAR SALESMAN.

B. E. CARPENTER, 26 State street, Troy, N. Y., is known all over the State as a prominent dealer in carriages, wagons, sleighs, horse and stable goods. He is sole agent for Troy and vicinity for the famous T. R. Bailey & Co.'s pneumatic and whalebone road wagons, and his stock also includes the finest productions of the foremost factories of the country. He is local agent for Columbus Buggy Co., H. H. Babcock & Co., Richland Vehicle Co., etc., etc. Everything new and novel in modern vehicles always on hand.

John Webber, wholesale and retail dealer in all kinds of carriages, wagons, and supplies at 320 South Centre street, Schenectady, N. Y., is one of the veterans in the trade, who carries a stock that suits all tastes and purses, and who never allows an article to go out of his establishment that is not full value for the money paid for it. Mr. Webber is New York State agent for the Martin Carriage Works, and local agent for Morris Woodhull, and the Richland Vehicle Co. He considers the Rubenstein light speeding runabout the chef d'œuvre of carriage workmanship.

Wilbert Moore, New Palz, New York, shows an exceptionally fine assortment of vehicles and supplies a large trade. He is a pleasant gentleman, a wide awake buyer and a splendid salesman. He is exclusive agent for his territory for the P. P. Mast Co., Eastern department; The Cortland Wagon Co., the Wilson Wagon Co., Keates, Wells & Co., and other celebrated makers. Mr. Moore, like all dealers who know a good thing when they see it, is a great admirer of the Rubenstein runabout.

W. D. McArthur, of Millerton, N. Y., is one of those hustling business men who is never content unless he has his hands full and is "always on the go." He is a large pork packer, and an extensive dealer in wagons, carriages, sleighs and harness. His repository on Main street, is always stocked with a complete assortment of well-built up-to-date vehicles from the most celebrated factories of the country. Among them may be found the best products of R. D. Scott & Co., H. H. Babcock & Co., the Richland Vehicle Co., and a full line from Wilder & Mallen, manufacturers' agents. Mr. McArthur is a close cash buyer.

Wm. H. Booth, dealer in carriages, wagons, sleighs, harness, robes and horse goods at West Farms, N. Y., is one of the most popular business men I have met, he seems to know everyone worth knowing from Harlem to West Farms. He is a hustler. A careful, close buyer, paying spot cash and insisting on the best, he has built up a large and increasing trade. His repository, 2076 Boston Road, is a fine two-story building, plate glass front, and 50x100 feet, is supplied with all that is desirable, new and novel in modern vehicles. Here may be found the best work of the best manufacturers in the United States. Mr. Booth is an old and respected citizen of West Farms, and enjoys the confidence of the entire community.

F. A. Shippelbeen, dealer in wagons, carriages and sleighs of the best manufacturers, Hudson, N. Y., has a handsome repository, two and one-half stories high and 100 x 100 feet in area, plate glass front and modernly finished throughout. Mr. Shippelbeen, whose office is at 603 Warren street, has always in stock upwards of one hundred and fifty different styles of light vehicles, modern built and embracing the latest improvements, from a speeding cart to a farm wagon. He has the agency for the best makers in New York, Pennsylvania, Ohio, Indiana and Michigan. Having relinquished all other business he devotes his entire time and personal attention to his carriage trade, which is increasing to such an extent that he found he could not serve two masters. Mr. Shippelbeen is still a young man, energetic and enterprising, has fine taste, good judgment, is a close buyer and a most successful salesman.

John Moore & Co., 59 Warren street, New York, are manufacturers and dealers in fine carriages, harness and horse goods. They build carriages of any description to order and their pleasure vehicles rank among the most elegant and up to date, the nameplate of the firm being everywhere accepted as a guarantee of excellence. The house was established in 1876. Select vehicles from other makers of fame constantly on hand.

David B. Tod, Hempstead, N. Y., practical carriage builder, painter and repairer, is centrally located on the corner of Main and Center streets. Mr. Tod is at all times prepared to furnish estimates on any work. He has also in stock a full assortment of the best work

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of other reliable manufacturers. All goods of latest style, most durable material and elegant finish.

Jewells & Brooks, dealers in horses, carriages wagons, harness and stable supplies at Norwich, N. Y., are wideawake, enterprising young men, who stand high socially, commercially and financially. They have no local competition. They are shrewd, well posted and pay cash. They are the authorized, sole agents for Norwich and vicinity for the Anderson Carriage Co., Durant-Dort Co., Richland Vehicle Co., Hanford Wagon Co., Cortland Cart and Carriage Co. Everything new and novel on wheels received just as soon as introduced.

Charles E. Lair, 45 and 47 Grand street, Gloversville, N. Y., is an agreeable young man, full of the vim and enterprise that command success. He conducts the finest and best stocked livery stable in Gloversville, deals extensively in carriages, sleighs, harness and business wagons, feed, hay, straw and wood. "Charlie," as he is familiarly called, is immensely popular, it being an American characteristic to care for a man who shows that he can take care of himself. He buys only the best in all lines of vehicles and pays spot cash. Mr. Lair is local agent for the Union Carriage and Gear Co., Keator, Wells & Co., Excelsior Wagon Co., Poste Bros., Richland Vehicle Co., and other firms of equal celebrity. His assortment is always kept up to the dot in quality, quantity and variety and embraces all the latest and most desirable novelties.

Messrs. Snath, White & Stapley constitute the best known and most popular firm in Geneseo, N. Y. They handle carriages, buggies, spring and other wagons, cutters, harness, robes, blankets, farm implements, fertilizers and seeds. They are the local agents for H. A. Moyer & Co., the Waterloo Wagon Co., W. A. Patterson, the Richland Vehicle Co., of Mansfield, O., and other reliable firms of equal celebrity. Every member of the house is an honest man, a worker and knows his business and his trade.

The Middletown Wagon Co., of which Mr. W. F. Royce is the efficient manager and hustling salesman, are manufacturers and dealers in wagons, sleighs, carriages, harness, robes and blankets. Their well appointed salesrooms and repository are at No. 10 Henry street. They are local agents for Babcock, Sturtevant, Larrabee & Co., H. O. Moyer, Cortland Wagon Co., etc., etc. All their goods are selected with the utmost care and in the light of perfect knowledge of the trade to be supplied. All orders are filled with promptness and dispatch and no efforts spared to give satisfaction.

C. M. Titus, 123 West State street, Ithaca, N. Y., is a busy man, but finds time to treat all who favor him with a call so politely that they find it a pleasure to transact business with him. He deals in real estate, city and country, is resident agent for the famous Buckeye binders and mowers, and also keeps on hand for sale carriages, harness, robes, blankets, whips and horse goods generally. Mr. Titus represents many of the leading carriage and wagon manufacturers of the United States and can furnish any vehicle desired on short notice and at factory prices, freight only added. Matterson & Tooke deal in carriages and wagons of all kinds, cutters, sleighs, harness, robes, blankets and stable sundries. This firm is conservative, shrewd and careful, close cash buyers and sell at prices that down all competition. They buy only the best and their motto is "An honest vehicle for an honest price." They are the Hamilton agents for the Owosso Carriage Co., Cortland Wagon Co., Watertown Wagon Co., the Richland Co., makers of the celebrated "Rubenstein" and other novelties, and a number more manufacturers of deserved celebrity.

Townsend & More, Walton, N. Y., deal in live stock, carriages, harness, robes and blankets. Dave More is known as a most competent judge of a horse or carriage. Dave Harum couldn't beat him on a deal; he is a shrewd buyer and as a salesman has no superior in the state. He lets no buyer escape. He is a capital good fellow withal and straight as a shingle in all his transactions with honest folks, but if you try to beat him, the Lord help you! Townsend & More carry a big stock of everything on wheels.

F. A. AMES & CO.

One of the most complete carriage factories in the United States is that of F. A. Ames & Co., of Owensboro, Ky. It would be an off year indeed that Mr. Ames did not add some new building to increase the capacity of his works, their latest being a new addition, the floor space of which is 72 x 172. At present they are very busy showing at the principal fairs, and will be at Cincinnati in November with a complete line of the latest styles in the vehicle line. As manufacturers of fine carriages this firm (or Mr. Ames) has been one of the greatest successes known to the carriage trade.

TRAVELER'S NOTES.

As to prospective industrial and business conditions: The effects of the drought in Illinois, Missouri, Arkansas, Kansas and the territories will for a time impede operations, the calamity budgets of the newspaper press superinducing capital to wait, or seek other channels. The losses directly entailed upon the farmers will necessarily reduce the consumptive demand for vehicles, harness and agricultural implements, and may bring on poor collections in some parts, as a goodly percentage of the Western farmers being of the class that would "move rather than pay up." Yet this forecast is but the deduction of the present pessimistic tone in the affected sections and cannot be considered of a nature to react upon the entire market and become the elementary feature thereof. It's of enough importance, however, to be gravely considered. When the laws of commerce have equalized the crops, the business conditions of the country in general will be as prosperous as ever—aye, more so—for the high prices paid for grain and provisions mean a greater distribution of money among the tradespeople.

The idea of building platforms to be used for the exhibition of vehicles and implements at rural shipping or trading points has proved its advantages and needs but practical development and wider introduction. These platforms should be at or near railroad depots for obvious and patent reasons. I know of manufacturers and distributors gaining 20 per cent. of their entire sales from these open air exhibits, as they attract transient trade.

Springfield, Mo., has up to the drought been a good inland commercial and industrial point, important in the distribution of vehicles and vehicle wood stock, and there are a score of places of about the same size which tap the agricultural sections terminated by St. Louis and Kansas City, alleging the immediate effects of the drought to be disastrous as regards movements. Implement dealers not holding on consignment will find it extremely difficult to dispose of the bulk of the season's purchases. But, as the trade has it, implements are not perishable goods.

The Ozark Wagon Co., a department of the Fayetteville L. & W. Co., Fayetteville, is one of the largest concerns in Missouri in this line of manufacture, producing its own wood stock and bringing it into the market. The plant has been running steady and no lessened demand is expected on account of heat-killed crops, commerce elementarizing from sources not basic upon sectional agricultural defects.

According to the Clark Manufacturing Co., Ironton, Mo., the demand for hubs up to July has been satisfactory, and from orders already on file there can be but a continuance of big business. High grain and produce prices never failed to vitalize industrial life, for capital is enlisted thereby which might otherwise be out of investment.

The forests of Southern Missouri will soon be depleted of merchantable lumber, but there is a supply of second growth timber from which carriage and wagon stock may be cut which seems almost inexhaustible.

While looking over factory products at Ft. Smith, Ark., I find the Winona farm wagon, made at Winona, Minn., to be a favorite. This shows the impression that only the makers of great fame and fortune could do business successfully through hardware and other dealers at large to be fallacious; lesser houses than the Winona could enter here with equal chances of success, and so anywhere else. It is not to displace favorites and ruin the local opportunities of competitors, but to do as they did, and become a favorite from one's own endeavor and energy rather than at the expense of your fellow, probably as deserving as yourself.

There is little but "casual grocery store" or "sidewalk squatting" mention to be heard about the implement combine. Farmers buy indiscriminately when independent, believing the makes of the syndicate shops to be the best and cheapest to be had. Dealers to a large extent must be prejudicial and few would dare deny they are earning lesser profits from combine goods than others. But, you know, it sometimes pays to serve the ends of those that make concessions and would succeed by merit as well as competitive artifice.

Cataloguing to the dealer is a departure of its own; so is cataloguing to the consumer. Now, there is special cataloguing which might be done in the nature of providing rural postmasters or merchants for distribution as has been the wont. But my advice is to send a trusted employe and have the towns, highways and byways thoroughly placarded. All manner of printed matter may be employed at this work, but I think with many others a cardboard

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weatherproof sheet, framed or not, depicting the rural or special types with striking ocular effects, clear print and concise text, and popular one-piece mention, beats all other billing efforts. J.

AMERICAN PAINTS AND VARNISHES FOR EXPORT.

An American paint factory is a decidedly interesting institution. The one referred to herewith is claimed to be the largest and best equipped factory of its kind. It bears a unique place in the paint world for many reasons. Among other things, for one very striking characteristic—it manufactures nothing but first quality goods. The Sherwin-Williams Co. has had a wonderful history of progress since its establishment under the firm name of Sherwin, Williams & Co. in 1869. Its growth since that date has been phenomenal in many respects, and yet most natural when it is considered that the foundation principles of the company are such as could insure only success. This foundation is "quality" and on it the structure, as it now stands, has been built.

From the small beginning of a store building in 1869 the company now operates the largest system of paint factories and warehouses on the American continent and probably in the world. The main offices and factories of the company are at Cleveland, O. The plant at this point consists of seventeen buildings, ranging from two stories in height to seven stories. In the general offices at Cleveland are also located the headquarters of the central division of the company's organization, which handles the business of the northern central portion of the United States. The balance of the continent is divided into five divisions—the eastern division, with offices and warehouses at New York City and a factory at Newark, N. J.; the western division, with offices and factory at Chicago, Ill., and a depot at Kansas City, Mo.; the Canadian division, with offices and factories at Montreal, Que., and a depot at Toronto, Ont.; the New England division, with offices and warehouse at Boston, Mass., and the Pacific division, with offices and warehouse at San Francisco, Cal., and a depot at Los Angeles, Cal.

The export department is located in the Eastern division offices at New York City, and the Newark factory is splendidly situated for purposes of foreign shipments. The space at command makes it impossible to describe with any thoroughness or detail the manufacturing process. Short statements of some of the most characteristic points must therefore suffice. Based upon the principle of "good quality" in its finished product, it is most natural that every step in the manufacture of the goods should embrace the same idea. The most striking evidence of this fact to the visitor at the Cleveland plant, is the scrupulous cleanliness of the entire factory. Every foot of the seven acres of floor space is conspicuously clean. One visitor put it very aptly by saying that there is a degree of cleanliness that would be noticeable even in a bakery. This applies not only to the floors and machinery, but also to the employes. Every facility is given to encourage cleanliness. There are a number of toilet rooms, including shower baths, large and excellently appointed, and towels are supplied in liberal quantities from the company's own steam laundry.

Another feature that impresses the visitor at the Cleveland plant is the splendid system of organization which makes work possible with the least friction and gives great orderliness to the entire factory. There is, besides, a surprising attention to detail, which is of course made necessary from the fact that quality prevails, and that in paint, upon the perfection of every detail, depends the perfection of the finished product. The most evident *esprit du corps* is another very distinguishing point. The relation of employee to employer is exceptionally close and friendly. There is a genial fellowship pervading the entire establishment which reaches from top to bottom of the scale.

The wonderful perfection of the machinery used is due to the fact that it has all been designed by the company and built in their own machine shops. The company claim that it does its grinding and mixing better than any other paint machinery known, and a wonderful cleverness is shown in the manner in which the forces of nature are used to supplant manual or mechanical labor, from the time the raw materials are started until the paint has been sealed in the package.

The work of insuring good quality in the goods commences in the company's chemical laboratories, where all the raw materials are analyzed to insure their purity. The standards of the company are very high in this respect, as of course they must needs be when good paint only is desired. From this point, through to the time that the cans are packed for shipment, every step is watched by experts. Every precaution is taken to insure the work being done correctly, and when a can of paint leaves the factory there is an absolute certainty of its being strictly up to the highest standard. In the process of manufacture, there are many very interesting points that always arrest the attention of the visitor. Among these are the following: A very exact method of measurement to insure accuracy in following the formulas; a skillful and unfailing method of watching colors; the exceptional fineness of grinding, and a check on the consistency of the paint at the time of filling, which makes it impossible for any of the goods to leave the factory either too thick or too thin.

Another of the very striking details in the work of the Sherwin-Williams Co. is their great belief in the power of intelligent advertising. In one of its buildings the company operates its own printing house and bindery, an establishment large enough and adequately supplied for the requirements of a large town printing house. In this department all the advertising of the company is designed, printed and finished, and sent out to the customers. The features include everything, from the regular sample folders to twenty-four sheet posters. It is a distinguishing mark of the Sherwin-Williams Co.'s advertising that it is all invariably in good taste, a point that gives effectiveness, but is often overlooked by advertisers.

Besides the large issue of advertising matter, such as pamphlets, color cards, circulars, posters, etc., the company publishes two monthly magazines, one exclusively for its employees; the other, called *The S. W. P.*, for the company's dealers. The latter magazine is designed to keep the dealers in close touch with the business and methods of the company, to give them talking points on their goods, and to help them in every business way to better represent the company and to make them better able to sell paint. The selling force of the company is very large, and covers the entire North American continent in the most thorough manner. There are over seventy-five men constantly on the road from one end of the year to the other, and the growth of the company is such that this staff is being increased at the rate of about fifteen men a year.

The products of the company embrace every paint product that is manufactured, with the exception of artists' colors. It also includes a very large line of house painters' and decorators' varnishes. To illustrate the extent of the business, it may be stated that in the last year the railroad customers on the company's books represented a rolling stock equipment of over 1,300,000 cars, while the entire equipment of all the railroads in the United States, Canada and Mexico is 1,670,000 cars. The annual capacity of the Cleveland factory alone is sufficient to paint inside and out with ready prepared paints 150,000 average houses. In quick drying coach colors, their capacity is sufficient to paint 1,000,000 buggies. In the item of freight car paint alone, the company's annual output would cover 350,000 cars, each one averaging about thirty-five feet long.

The company operates its own tin can plant with a capacity of turning out 4,000,000 cans a year. In the box and cooperage department of the company the mills have a capacity of 50,000 feet of lumber and a dockage front along the river of 1,000 feet. The company owns its own steamship for carrying lumber from Duluth to Cleveland. The sample department, where the sample folders are finished, turns out annually nearly 20,000,000 paint samples. The capacity of this department allows them to paste 75,000 samples a day, while the amount of the paint that is spread on their color cards would paint all the houses in a good sized town.

There are very many other interesting features of the Sherwin-Williams Co.'s methods, including some very interesting work for the social betterment of their employees. In every point the company maintains a standard of business decorum that gives to its wonderful success in the past thirty years a permanence of which nothing can rob it. The policy of the company is a broad one. It includes the very widest expansion. Up to the present time they have confined themselves almost exclusively to trade on the American continent. Some considerable foreign trade has come to them, but they have never sought it directly. Now, however, an export department has been organized and foreign representatives are in the field. The company is in the race for export trade with all the vigor at its command, and there is very little doubt that the methods that have won them success at home will also bring them big business abroad, especially as there is a large and constantly growing market there for American paints and varnishes. Visitors to the Pan-American Exposition are invited to visit any of the factories or offices of the company, where they will receive every courtesy possible to be granted.

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Items of Interest.

CARRIAGES AND ZINC.

Good fortune has befallen several of our friends in the carriage trade who have had the forethought and courage to discover and develop rich zinc deposits in Arkansas. From expert and reliable sources the property of the Climax Zinc Mining Co. is reported to be exceedingly valuable. In fact the best in the district, and twice the size of a neighboring property which recently sold for $250,000.

It is known that the zinc ores of North Arkansas are the richest in the world. In addition they are more cheaply mined than elsewhere, as they are mostly above water; whereas in Europe zinc is mined at a depth of 2,500 feet. As the European mines are giving out and grade of ore low, there is an increasing demand at good prices for high grade American zinc ores.

The stockholders in the Climax company are all identified with the carriage trade, and in the further development of their property they desire to have the stock held by carriage men, so it may be truly called a "carriage trade mine."

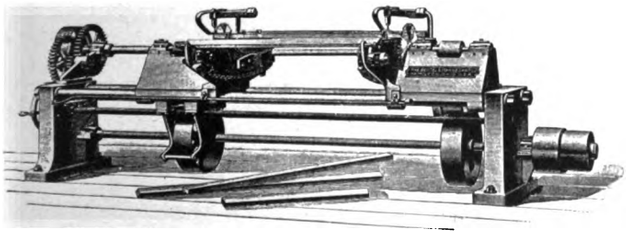
The directors have decided to offer 100,000 shares at 30 cents, the proceeds of which will enable them to equip with modern machinery and be ready to have their bins well filled with concentrates when the railroad reaches them in a few months.

The following are the officers and directors: Jno. F. Galvin, president; G. Edgar Allen, vice president; Andrew F. Wilson, treasurer; directors: Wm. R. Innis, manager Studebaker Bros. Co. of New York; Henry M. Duncan, of J. B. Brewster & Co., New York; Wm. P. Mallen, of Wilder & Mallen, New York; Orville E. Short, of Short & Milburn; New York; Charles N. Linn, carriage builder, Brooklyn, N. Y.; George Schuchman, wagon builder, New York; Albert E. Schafer, manager Sherwin-Williams Co., Cincinnati, O.; Herbert Longendyke, *Dealers' Journal*, Troy, N. Y.; Jno. F. Galvin, president Metal Stamping Co., carriage material; E. Edgar Allen, wholesale carriages, New York; Andrew F. Wilson, secretary and treasurer F. S. Remsen Manufacturing Co.

The company's office is at 99 Nassau street, New York, where full information can be obtained. We congratulate our friends of the Climax company.

AUTOMATIC DOUBLE CUT-OFF EQUALIZING SAW.

This machine is built by the Bentel & Margedant Co., Hamilton, O., and is designed to meet the requirements of wagon and gear builders and in fact for all places where cutting off to standard lengths is required. It is built in two different sizes to cut off up to 6 and 12 feet long respectively. The material is automatically fed through the machine by two chains supplied with dogs and driven by a feed shaft geared to the proper speed through a train of compound gearing. The saws are carried on long mandrels journaled in heavy housings. The right-hand housing is made stationary while the other

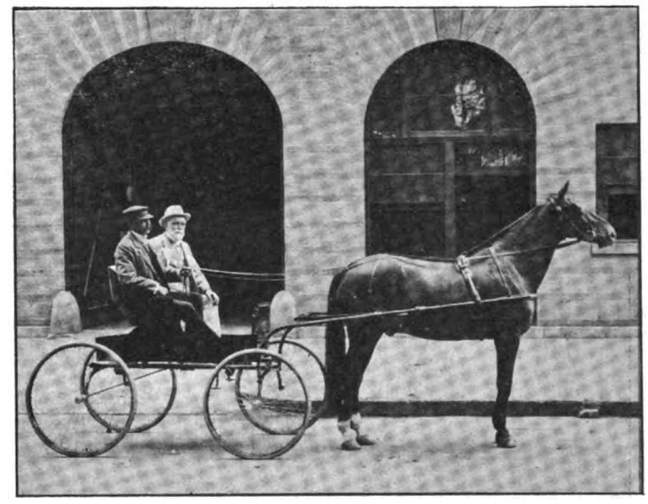


DOUBLE CUT-OFF EQUALIZING SAW.

can be adjusted by means of a screw and hand-wheel to any distance between saws to the full limit of the machine. The long tables or chain carriers are attached to the housings and need no re-adjustment, always remaining in their relative position to the saws. The material is automatically held down on the tables while being operated upon by heavy spring pressure bars which yield to the inequalities of the material. The six-foot machine shown by the illustration weighs about 2,500 pounds, while the twelve-foot machine weighs about 3,000 pounds. The countershaft extends the full length of the machine, the driving pulley on the adjustable end moving on this shaft in a long sleeve box provided with double feather. It has tight and loose pulley 12 inches in diameter by 6¼ inches face, which should make 650 revolutions per minute.

THE EUREKA COMBINATION WAGON AND SLEIGH.

J. T. Burdick, of Friendship, N. Y., has introduced a novelty in the way of a combination wagon, one man wagon, speed wagon, one man speedway sleigh, two man speedway sligh, four vehicles in one. To effect this the two man body telescopes over an eighteen-inch one man body, and is locked to a specially constructed platform, which is securely bolted to each wagon or sleigh gear. Each of the two bodies is separately transferable to both gears, and less than two



TWO MAN SPEEDWAY IN USE.

minutes' time is required to make the transfer, and the entire change is made without the use of any tool. The symmetrical and neatly balanced proportions of a complete rig is maintained in each of the outfits, so quickly transformable from one to another; the closest scrutiny is required to discover evidence of any relation to a combination when viewing either of the vehicles separately, especially when in use.

TIMKEN ROLLER BEARING AXLES.

Although, as noted in the June number of The Hub, the Timken Roller Bearing Axle Co. increased the capacity of their St. Louis plant during the past spring, demand for their axles has grown at such a rate that, in spite of working night and day shifts, they have been again compelled to arrange for increased facilities. With that aggressive determination for which the Messrs. Timken have always been noted, they once for all decided to put themselves in position to keep pace with an expanding demand by erecting a new factory at Canton, Ohio. Contracts were closed during the past sixty days providing for the erection of buildings and installation of machinery, at the earliest possible date, and it is now announced that the new factory will be in operation by November 1 next, upon which date the headquarters of the company will be transferred to Canton, O. Mr. J. D. Alsup, late superintendent of the Miami Cycle & Manufacturing Co., of Middletown, O., will be in charge of the new factory in the same capacity, and it is expected that under his experienced guidance and with quadrupled facilities the company will be able to keep up with their orders thereafter. The Leonhardt Wagon Manufacturing Co., of Baltimore; the Fulton & Walker Co., of Philadelphia, and the Abbott-Downing Co., of Boston, who, as is well known, are among the leading manufacturers in the vehicle trade, have adopted and are pushing the Timken roller bearing axles in their work, which must be construed as convincing evidence that the Timken roller bearing axles are proving themselves superior to the average run of anti-friction devices. Branch offices will be maintained in St. Louis, Chicago, Philadelphia, Boston, Baltimore, Providence, Washington and New York, the latter being the Eastern headquarters, in charge of Mr. L. M. Preston, eastern manager, who supervises the eastern agencies.

THE HOAGLAND BUGGY CO.

The Hoagland Buggy Co., of Owensboro, Ky., have purchased a new factory complete with engines, boilers and line shaftings, and expect to be in their new quarters in a few weeks.

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CLEVELAND TWIST DRILL CO.

In our talks on the Pan-American Exposition in September Hub, we called attention to the beautiful exhibit made by the Cleveland



EXHIBIT OF THE CLEVELAND TWIST DRILL CO. AT PAN-AMERICAN.

Twist Drill Co., of Cleveland, O. We did not receive an illustration of this exhibit until too late for that number, and we accordingly publish it this month.

STANDARD ROLLER BEARING CARRIAGE AND WAGON AXLES.

The Standard Roller Bearing Axle is claimed to be the strongest, yet most simple, anti-friction axle upon the market, and also that it is the only roller bearing axle that can be applied to old wheels without injury to the spokes, and which has been in constant, satisfactory use for years on wagons weighing with load over 17,000 pounds. It consists of but one part more than an ordinary axle—namely, the roller bearing cage, which is in one piece, having no loose parts to become lost. The most ignorant drivers cannot make a mistake in its use, as there is nothing that requires adjustment, and it can be applied by all wheelwrights and blacksmiths. The saving by the use of the Standard roller bearing axle varies from 50 to 75 per cent., according to a United States Government test. The Standard Roller Bearing Co. owns United States and foreign patents, which they will protect against all infringers. These bearings are of such universal applications that we cannot attempt to enumerate them, but recommend our readers to send for the company's illustrated catalogue, which is fully illustrated and contains as well numerous testimonials from users. The company's address is Philadelphia, Pa.

WILL VISIT CARRIAGE MAKERS.

Mr. A. J. Hess, who has been in the spring department of the American Steel & Wire Co. for several years, will in the future visit the carriage manufacturers in the interests of the American Steel & Wire Co. He is a gentleman thoroughly versed in his line of business, and we are sure the carriage trade will appreciate his acquaintance. Mr. Hess succeeds Mr. P. A. Lewald.

BROWN-LIPE GEAR CO.

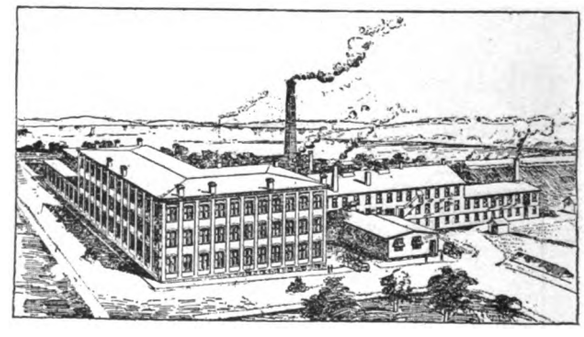
The Brown-Lipe Gear Co., Syracuse, N. Y., will have six models of their equalizing gears at the Madison Square Garden Automobile Show, November 2 to 9, in Chas. E. Miller's spaces, Nos. 57 to 59.

THE NEUSTADT-PERRY CO.

The J. H. Neustadt Co., of St. Louis, Mo., have reorganized their business, admitting R. E. Perry as a partner, and the firm will hereafter be known as the Neustadt-Perry Co. The introduction of further capital and energy will stimulate this already progressive concern. They have determined to branch out and have now ready for distribution handsome catalogues descriptive of their lines of forged axles (long distance and ball bearing) skeleton fifth wheel, wire wheels, solid and cushion rubber tires, and a complete line for the bike wagon builder. Further, they illustrate and are manufacturing a most complete line of automobile supplies; their running gears, automobile wheels, &c., having already found a home on several continents. Their drafting office has been devoting its exclusive time to the introduction of new goods, among which we can enumerate solid rear axles with differential spur gears, telescopic hubs presenting a new adjustment between the flanges. The same general idea is shown in their advertisement in this issue of a ball bearing bushing telescopic to fit any length of hub in wood wheels, new designs in bodies and running gears, and a varied line of such parts they will from time to time show in our advertising columns. The Neustadt-Perry Co. have aimed to supply the present and prospective building trade with a line of goods entirely complete to build horseless vehicles. The success of this idea is positive, as it obviates the necessity of customers buying different parts in territory from ocean to ocean, with the possible doubt, owing to the newness of the business, that even after these delays and inconveniences are overcome, of the parts not fitting. The concern will be happy to mail catalogues and answer questions received from any one interested in their line.

TO BUILD A NEW FACTORY.

The new shop of Loring Coes & Co., incorporated, Worcester, Mass., to be built at Mill and Coes streets, will be a model in every respect. In it will be located the new department of the company's business, for the manufacture of a new wrench, which will be conducted on a large scale. The contract for the building has been let. It calls for the expenditure of about $33,000 for the building, which must be ready for occupancy November 1. To equip it ready for business will mean an investment of more than $50,000. Loring Coes & Co., incorporated, mean business, and will rush work in order to get the plan in operation as soon as possible. An impression has got abroad that the corporation did not really intend to go into the manufacture of wrenches. Loring Coes, who owns practically all the stock of Loring Coes & Co., incorporated, owns one-half of the stock of the Coes Wrench Co., and is president of that corporation. Loring Coes was the inventor of the first screw wrench, patents on which were issued to him in 1841. The number of that patent is 2050. The recent United States patents number to nearly 679,000. He is the oldest wrench manufacturer in the world. He believes



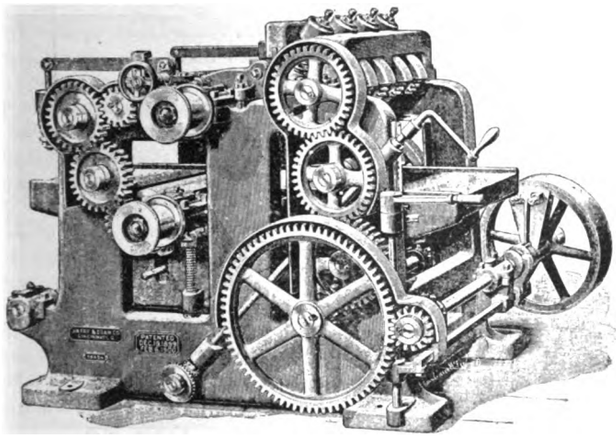
NEW PLANT OF LORING COES & CO.

there will be a great demand for the new wrench, which contains several radical improvements, including greater strength. The new building is shown in the accompanying picture, with the present wooden structure of the company, where machine knives of all descriptions are manufactured. The new building will be of brick, and of the most substantial mill construction throughout. The windows will be in pairs with heavy brick piers between, so that practically two-thirds of the wall will be of glass. The three-story section of the building will be 110 x 50 feet, with a three-story annex 45 x 50 feet. The one-story section of the building, in which will be located the forge room, is 75 x 50 feet.

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NEW PLANER.

We illustrate a new planer, just placed on the market by J. A. Fay & Egan Co., of No. 421 to 441 West Front street, Cincinnati, Ohio, and patented December 19, 1899, and February 6, 1900. It is their new No. 31 double cylinder planer. We call your attention to the following points: Planes 24, 27 or 30 inches wide and 8 inches thick. Patent sectional feeding-in roll in four sections, each section center geared, with gear driving downward. Each section of the roll is entirely independent of the other in its action, accommodating



NEW PLANER.

great variations in thickness, and without any tendency to disarrangement. The cylinders are brought very close together, insuring the best of results on either short or long material. Upper feeding-out roll to lift parallel; upper cylinder double belted; cylinder pulley taper fitted and double flanged. Feed instantly started or stopped by friction clutch; lower cylinder to draw out endwise; has also receiving plate after it, by which to conveniently set the knives. Sectional weights to feed rolls; self-oiling reservoir boxes. This planer is designed especially for wagon, carriage, furniture, cabinet and chair factories. The manufacturers will willingly furnish prices and more detailed description of the machine by applying to them.

E. STINSON & CO.

Edward Stinson & Co., proprietors of the Baltimore Wheel factory, Baltimore, Md., manufacture all kinds of wheels, namely. Warner, Sarven, Compressed Band, Kenney, or Star, and plain wood hub wheel. They also furnish wheel stock of every description, thoroughly dry, ready for immediate use, and make a specialty of very fine plain wood hub wheels, such as are intended for high grade buggies, broughams and family carriages. This firm's success with these very difficult to make wheels has been universal. Since last year this firm are also putting steel, iron or rubber tires on wheels for such of their customers as prefer to have their wheels in that shape. They have installed a strictly up-to-date blacksmith department, which includes all the latest labor saving machinery (including a West tire setting machine, which takes in all sizes from five-eighths to six-inch tire), that is intended to do the finest work, and have met with excellent success in tiring wheels. Their factory is an old established one, and its facilities are such that the finest work manufactured from thoroughly seasoned eastern timber can be turned out with the utmost despatch under the personal supervision of the firm.

BUSINESS INCREASING.

The American Roller Bearing Co., of Boston, Mass., have prospects of a large business in bearings for automobiles during the coming season. Their business has multiplied five times in volume during the last six months.

STANDARD TOOL CO.

The Standard Tool Co., of Cleveland, O., have issued a neatly illustrated and well printed catalogue in the Spanish language. It has an illuminated cover and contains prints of some of their standard tools and a bird's-eye view of their great factory.

CONCORD AXLES.

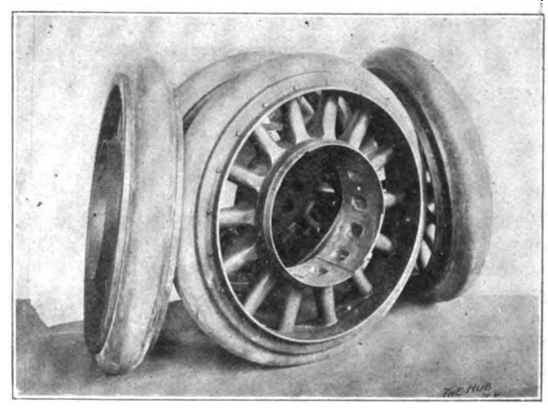
The Genuine Concord Axles, manufactured by the Concord Axle Co., at Penacook, Concord, N. H., have an enviable reputation both at home and abroad, which has been earned by many years' production of first class goods. The shops of this concern are pleasantly situated on the Contoocook river, near its junction with the Merrimack river, and has ample water power to operate the machinery, which is of the most approved designs for the production of wagon and carriage axles in large quantities. Their axles are made from carefully selected stock, with a view to obtain the best wearing quality, and finished to standard sizes in all parts. The fact that they have supplied axles to some of the best wagon makers for over thirty years continuously shows that they are keeping the quality of their goods up to the highest grade. The success of this company is due in considerable degree to the management of the treasurer, D. Arthur Brown, who knows the practical part of manufacturing from A to Z, and whose name stamped on an axle is an accepted guarantee of superiority.

DECATUR BUGGY CO.

The Decatur Buggy Co., of Middletown, O., are manufacturing a line of work that should command the attention of all dealers who handle fine carriages. Their styles are up-to-date in every respect, and the workmanship is of a high character. The company is alive to all improvements and the live dealer can find no better house with which to deal, as they are prompt and reliable. The success they have met with in the past has taxed their capacity for production to the utmost and it has become necessary for them to enlarge their plant in order to keep pace with the demand. Their past product has been eight thousand jobs a year. With their increased facilities they hope to add at least one-third more during the coming year. They are satisfied that there is a market for the high grade goods they are putting out and all that is required is that they produce the goods, as all dealers who are handling their vehicles are asking for more. The president and manager of the company is Harry H. Elwood and the successes of the past prove his good judgment and business acumen. An entwined bust of Commodore Decatur is the company's trade mark.

CALUMET TIRE RUBBER CO.

The illustration herewith shows what is believed to be the largest tires ever turned out. They were made by the Calumet Tire Rubber Co., of Chicago, Ill., for the Hub Motor Transit Co., their weight being 125 pounds apiece, and were originally built to stand a strain of eighteen thousand pounds. Since they were first put on to the Hub Motor Co.'s vehicle they have been subjected to a strain of 24 000 pounds, and up to this present date have run nearly of quite



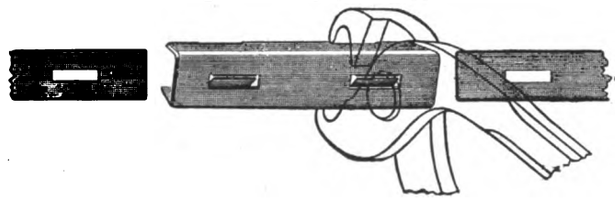
TIRED BY CALUMET TIRE RUBBER.

1,000 miles carrying this excessive load, and are to-day absolutely without a blemish, nor do they show that they have had any hard usage whatever. We believe this test will be of interest to the vast multitude of our readers who have had doubts about the rubber tires for excessively heavy loads. The Calumet people seem to have solved it.

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COLUMBIA RUBBER TIRES.

THE Columbia Vehicle Tire Co. have a proposition which should appeal to everyone who applies rubber tires. Their lock fastening which is shown herewith and their special equipment used for applying tires simplify the operation and insure good work. They have built up a large New England business during the past two seasons. Their claim of a large saving of time in applying solid rubber tires, by their system, is verified by their licensees. A smooth, strong joint is made without brazing. Their equipment applies the two wire tire



LOCK FASTENING.

equally as well, and both styles of the highest grade Akron (O.) rubber are furnished their licensees. It is guaranteed that workmen can at once apply tires accurately, from their printed directions. They carry a large stock of both styles of material at Boston to supply their eastern trade, and ship direct from their Akron factory to western customers.

The galvanized tapes used in applying Columbia tires are the result of an extended experience with solid rubber tires, and are warranted not to rust. These tapes are used single in small tires and double in large sizes. The lock fastenings are of high grade steel, also galvanized. They are sent to licensees ready to apply and are locked to the ends of tape after same have been punched and squared with a small hand device while the wheel is in applying machine. The punching and squaring are done in one operation. The general offices of the company are at 97 Haverhill street, Boston, Mass.

A NEW VEHICLE COMPANY AT PONTIAC.

THE "Standard Vehicle Co." is the title of a new buggy company recently organized which hopes to begin business in their new plant by November 1 in Pontiac, Mich. It has been incorporated with a capital stock of $35,000. The following officers were elected: President, H. C. Kudner; vice president, H. E. Pierce; secretary, L. W. Nichols; treasurer, F. L. Perry. President Kudner has been successfully engaged in the newspaper business at Lapeer, and will look after the marketing of the product of the factory. Vice President Pierce has been in the vehicle business as an employee for the past eight years, and will act as superintendent of the new concern. Secretary Nichols has been connected with Flint and Pontiac carriage factories for some fifteen years, and will have charge of the purchasing and manufacturing of the new concern. Treasurer Perry is cashier of the Oakland County Savings Bank. The company's factory is to be a five story brick building, 75 x 30 feet. In the meantime they will start work in temporary quarters, and get their line of vehicles initiated; these will be surreys, buggies, driving wagons and standard lines of light work.

THE SEINSHEIMER PAPER CO.

HAVE you ever seen the paper covers for carriage shafts and other parts of the vehicle, for packing without injury to the paint or varnish? If not you should write the company at Cincinnati, O., and get particulars regarding these covers. The demand last year for these covers was much greater than ever before, a positive proof of their value. They will show their goods at the Cincinnati convention exhibit.

NOVELTY TUFTING MACHINE.

WE have received a pamphlet entitled "A Record of Progress in the Tufting of Vehicle Seats and Cushions," published by the Novelty Tufting Machine Co., 187 Michigan avenue, Chicago, Ill. This pamphlet shows conclusively that better and less expensive work can be done with their machine than by hand, and gives a partial list of the carriage makers who are using it. It is a money saver.

THE INITIAL TOE PAD CO.

THE Initial Toe Pad Co., of Three Rivers, Mich., had a grand opening and house warming to dedicate their new building on September 4. The *News Reporter* says:

"At an early hour the crowd began to assemble, and the third floor was simply packed full as Three Rivers' idealized cornet band discoursed sweet music. Messrs. Barrows, Watson & Knowles, the enterprising gentlemen who form the company, were on hand to welcome the hundreds of guests, and it did seem as if all Three Rivers and a big contingent from elsewhere were present. At about nine o'clock the dancing began and continued until about two, Ewers' orchestra furnishing the music. Everything about the gathering was most delightful without a single incident to mar the harmony of the occasion, and it was a most auspicious opening of the new building, of which the company feel justly proud. May they always be as crowded with orders as they were with guests and may their customers always be as well satisfied as the attendance at the initial opening of the Initial Toe Pad Co."

"SPRING" BRAKE BLOCKS.

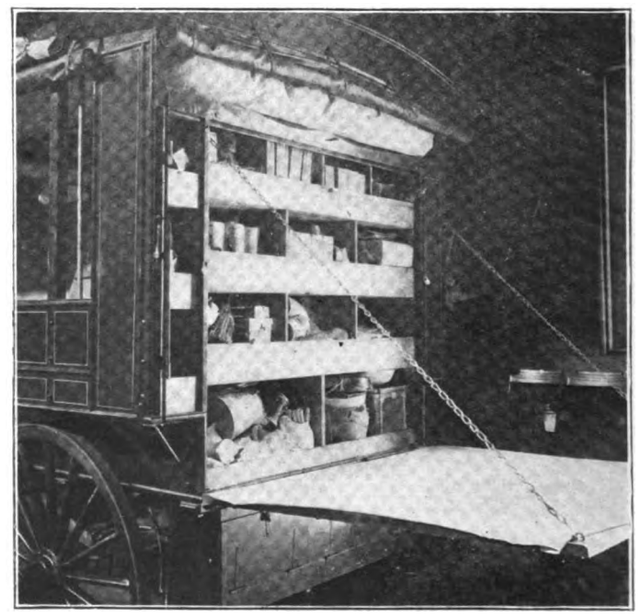
MORGAN POTTER, of Fishkill-on-Hudson, the inventor of the "Spring" Brake Block, is a practical carriage maker of twenty-seven years' experience, and the invention of the "spring" brake block is the result of careful study and long experience as to the furnishing of brakes. In addition to his own invention he has bought several attachments, the latest of which is the adjustable brake and shaft coupling. He will show his line of goods at the dealers' show in New York, beginning Oct. 14th.

THE FANCHER MACHINE CO.

THE Fancher Machine Co., of Baldwinsville, N. Y., is an incorporated company, manufacturers of flexible shafts and a complete line of tools connected with their use for mining purposes, ship building, machine shops, carriage factories, and all kinds of boring, drilling, emery grinding, polishing, etc.

THE CLARK CARRIAGE HEATER.

ON page 152 will be found advertisement of the Clark carriage heater, manufactured by the Chicago (Ill.) Flexible Shaft Co. It will hold heat for fifteen hours, and is one of the winter necessities of a stable outfit. Thousands are already in use, and they are carried in stock by the best dealers in carriages.



REAR VIEW OF CAMPING WAGON.
(See also illustration in "Latest Styles.")

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VICTOR RUBBER TIRES.

In response to a letter we recently sent to the Victor Rubber Tire Co., Springfield, O., we received a communication from them containing the following, which we think will prove of interest to our readers. The Victor tire is well known and highly endorsed, and its points of merit should be fully investigated by our readers:

"We propose to continue the policy heretofore pursued in making the very best tire an honest compound will produce—a course that will fully sustain the enviable reputation already established by the Victor, and be consistent with a booklet that we are just having published containing about three hundred testimonials that say something, and which were cheerfully contributed by people who know what they are talking about, and mean what they say. The Victor dovetail tire is justly gaining popularity because of the scientific principle upon which it is based—because it is obvious that the base of a tire is best suited to bear the load. The Victor dovetail tire is so formed as to carry out this logical idea, and is therefore meeting with general approval. Our sales force has been augmented, and supported as it will be by an experienced and vigilant factory organization, under the supervision of one of the most capable and expert superintendents in the country, will no doubt increase our sales. An important branch of our business is the manufacture of rubber matting for vehicles, and perforated mats for automobiles, residences, etc. These are made in various colors and designs. A new price list of this line is now ready for distribution. An exhibit of our products will be made at the coming New York convention, as well as at the Cincinnati meeting a week later, at both of which we will be pleased to meet and greet our friends, and the other fellow's friends, too."

PARRY MANUFACTURING CO.

Mr. F. L. Deeds has taken employment with the Parry Manufacturing Co., and will represent them in Western Iowa with their excellent line of goods. Mr. Deeds is a brother to Mr. Deeds, of Deeds & Manly, St. Louis, and Mr. Deeds, of Deeds & Hirsig, Nashville, Tenn., and is thoroughly acquainted with the buggy business.

CHARLES WING & CO.

One of the most important factors to success in conducting any line of manufacturing business is to know where and of whom to purchase supplies. Without this knowledge, disappointment is only a matter of time, and the sooner one realizes this fact the better. The manufacture of carriages is a business which requires an unusual amount of acuteness in the selection of supplies, and that our many readers may realize the interest we take in their welfare, we wish to place before them the name of The Chas. Wing Co., of Amesbury, Mass., as a company handling large quantities of carriage makers' supplies of the most superior character. We can further say that they furnish the larger part of the materials which are used in the manufacture of the famous Amesbury carriages, which in itself is a sufficient recommendation. They are leaders in their business, and special representatives of many leading lines. We would most certainly advise those who are interested to place themselves in communication with this company, assuring them that they will receive prompt and courteous attention, low prices, and goods that are always just as represented.

NEW FACTORY.

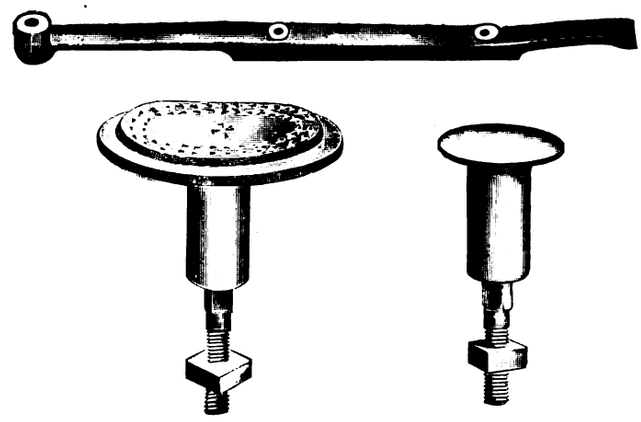
The Kentucky Buggy Co., Owensboro, Ky., has been organized, with Messrs. J. N. Grady, W. S. Hazel and Z. T. Robinson as the only stockholders. The articles of incorporation will be filed this evening or to-morrow. The capital stock is fully paid in cash. An uncommon feature will be that no debts will be contracted by the corporation. If at any time more money is needed in the business it will be provided for by the investment of additional cash. Each of the three gentlemen has contributed an equal share to the business. The capital stock is $40,000. The factory will be located on the L. and N. railroad, at the corner of McFarland and Lewis streets. The building will be L shaped, fronting 128 feet on Lewis street and 100 feet on McFarland streets, both parts 55 feet wide. It will be four stories throughout, and will contain 35,000 square feet of floor space. It will be ready for occupancy on November 1, and will start with a force of fifty skilled workmen.

THE MILLER CARRIAGE SUPPLY CO.

The Miller Carriage Supply Co., Bellefontaine, O., have recently reorganized. This is one of the very oldest concerns in the body making business, and we believe they are the pioneers in that industry. Their line of bodies this fall is very extensive, their styles both original and fine, and our readers should not fail to send for catalogue and price list.

CARRIAGE FORGINGS.

The Blakeslee Forging Co., Plantsville, Conn., have added finished steps and a number of carriage and coach forgings to their line, and



A GROUP OF BLAKESLEE FORGINGS.

these in connection with their special forgings have kept this company very busy during the past few months. Blakeslee goods enjoy a splendid reputation in the trade, and those in the market for forgings should write for prices.

SCHUBERT BROS. GEAR CO.

Several specialties of the Schubert Bros.' Gear Co., Oneida, N. Y., are shown in their advertisement on another page. Readers of The Hub should study these designs, as they are up to date, reasonable in price and quick sellers. Their new catalogue is now ready, and their exhibit at the C. B. N. A. convention in Cincinnati will be unusually attractive.

THE THOMAS SPRING.

The W. S. Shuler & Thomas Spring Co., Amsterdam, N. Y., manufacturers of the new Thomas Patent Spring, will have an exhibit at both the New York and Cincinnati (C. B. N. A.) conventions. This spring is simply a wonder. It is light, elastic, novel and it will not break. Their exhibit should be visited by every reader of The Hub. They say their "latch string" will be on the outside of their booth.

ROEHM & DAVISON, LTD.

Roehm & Davison, Ltd., Detroit, Mich., whose incorporation is noted in our "Trade News" department, and who are one of the very largest handlers of carriage trimmings in the West, will be represented at the Cincinnati convention by all their representatives who call upon the wholesale carriage trade, and also by Chas. M. Roehm, general manager. Their headquarters will be at the Grand Hotel. Mr. Roehm will attend the New York exposition as well.

TUTHILL SPRINGS.

After a shut down of three weeks to allow the installation of a new boiler of increased capacity, the Tuthill Spring Co., of Chicago, is again ready to turn out its famous springs of all sizes for vehicles and automobiles. This enlargement was made necessary by the ever increasing number of buyers who are rapidly learning of the satisfaction these goods give and the thoroughness of their manufacture.

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MYER'S SILKS AND THREADS.

JOHN C. MEYER & Co., of Boston, Mass., are as ready as ever to supply their high standard silks and threads to carriage trimmers. These need no praise from us; they have fought their way to the front through sheer merit, and there are few indeed who have not tested their good qualities. The uniform quality in all particulars that go to make good sewing silks and threads relieves the buyer from all doubts as to obtaining the goods desired when placing orders. You are sure as to quality and uniformity of the threads and just treatment by the firm. Nothing more, therefore, is needed.

THE KIRK-LATTY MANUFACTURING CO.

THE Kirk-Latty Manufacturing Co., of Cleveland, O., have mailed us a copy of their new catalogue, which they are about to distribute to the trade, and will be very glad to send a copy to any interested party. They are about to let a contract for extensive additions to a portion of their factory and office, giving them 275 x 50 feet additional floor space, and shall be able to take care of a largely increased volume of business in the following lines of goods, namely: Stove bolts, tire bolts, carriage bolts, stove rods, machine screws, rivets, tacks, cold pressed nuts and special bolts, screws, rivets, nuts, tacks, etc., of all kinds. They are having immense success with their Cleveland carriage bolt, which is gaining in popularity every day, and are also selling their Cleveland tire bolts to the largest carriage and wagon manufacturers in the country, and above bolts are giving perfect satisfaction in every way. The secret of their success lies in the high quality of their goods.

"SOLID COMFORT."

THE Schlegel Manufacturing Co., of Rochester, N. Y., manufacturer of carriage trimmings, are sending out a quaint calendar for the year beginning September, 1901, consisting of a gray mat and calendar leaves, with the central figure of an old musician in colors, resting in an old armchair smoking a long stem pipe indicative of moment of rest.

THE CURTIS WHEEL.

THE Bookwalter Wheel Co., Miamisburg, O., are making a specialty of Ohio second growth wheels, and have found from experience that it pays to use only high class stock. Their success with the Curtis wheel when used with rubber tires, has been phenomenal. At the Cincinnati convention Mr. Mitchell will be on hand to furnish full particulars. If you do not expect to be there, write them for information.

NOW WITH THE VICTOR RUBBER TIRE CO.

THE Victor Rubber Tire Co., of Springfield, O., announce that Samuel Siddall, formerly district salesagent for the American Steel Hoop Co. at Cincinnati,, is now associated with their company as manager of sales. Mr. Siddall has been for many years a very valued employee of the American Steel Hoop Co., and in taking his new position is strongly fortified by a vast acquaintance among the carriage trade, whom he has so long supplied with channel and other carriage irons, etc.

KEEP YOUR EYE ON "DECATUR."

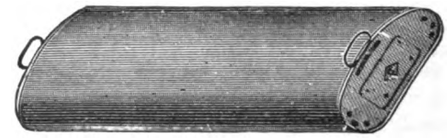
THE Decatur Buggy Co., Middletown, O., will have an exhibit at the Cincinnati exposition in November, and dealers should not miss giving same the very closest inspection. It will bear it well. "Decatur" vehicles are ready sellers and they help make trade.

MULHOLLAND SPRING CO.

THE Mulholland Spring Co., of Dunkirk, N. Y., are manufacturers of the Mulholland shaft coupler, a most complete article; one that is neat, strong and reliable, and made in the best possible manner. It is dirt proof, a feature that insures durability. See the company's advertisement on another page of this month's HUB.

LEHMAN HEATERS.

Now that cold weather is near it is well to see what you can do for the comfort of your customers. This will naturally lead you to procuring something that can be used for keeping the feet warm, and you can find nothing better than the Lehman heaters, and the coal that comes with them. These insure a steady, uniform heat for



LEHMAN HEATER.

hours, and when wanted can be made ready for use in a short time. The fact that there are 150,000 of these heaters in use is a guarantee of their value. See the company's advertisement in this month's HUB and write to Lehman Bros., New York, for further information.

HORTON BODIES.

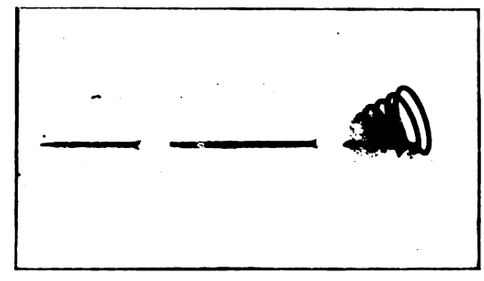
IT is well known that the brougham enjoys the place of honor as the most aristocratic and one of the most practical of all town carriages used during the winter months. Carriage builders exert their best efforts to excel in broughams. A few firms have gained a reputation which is world wide in this special line of work. H. A. Horton, New Haven, Conn., is recognized as one of the leaders in brougham styles and his products are in demand everywhere. His policy of using only the best materials and employing only skilled workmen has made the Horton grade stand for the very highest grade. The old plant at 28 Artizan street, having become too small for the increasing business, he has removed to the large three story brick factory at 127-131 Parke street, where there is every convenience to build all styles of carriage and automobile bodies ironed in the white. Mr. Horton's success since going into business for himself has been phenomenal. He will have an exhibit at the carriage dealer's convention in New York, October 14-19, and it will pay all visitors to look it over carefully.

DEATH OF AN INVENTOR.

THE death has occurred at Gainsborough, Lincolnshire, England, of Richard Hammond, coach builder, at the age of 73, who claimed to have made the first pedal and crank bicycle in England. His machine, which was made of wood and iron, was partly a copy of a French invention, and was made within a month after an illustration of the French machine appeared in a technical paper.—*Philadelphia Public Ledger.*

A NEAT SOUVENIR.

G. H. LOUNSBERY & SONS, of Cincinnati, O., dealers in carriage trimmings and supplies, have gotten out a neat little souvenir in the



SOUVENIR PIN.

form of a scarf pin, the head of which is a miniature, a duplicate in form of a cone spring. They are to make a special effort to show this spring at the C. B. N. A. convention, and the scarf pin will be in evidence as well as the spring as used by the carriage trade.

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GALION WAGONS AND GEARS.

THE Galion (O.) Wagon & Gear Co. are not one of the oldest spring wagon manufacturers, but they are one of the most progressive. Their capacity of 80,000 square feet of floor space is now and has been the entire season taxed to its limit. They are adding another story to their building, which will give them an entire floor space of 100,000 square feet. A little later we hope to show our readers a cut of this mammoth plant.

FORMED A NEW COPARTNERSHIP.

HENRY A. SCHAEFER and Henry Klein formed a copartnership under the style of "Schaefer & Klein," to succeed the business heretofore conducted so successfully by Henry A. Schaefer in Rochester, N. Y., in the manufacturing of carriage, hearse and casket trimmings, etc. Henry Klein has long been known in Rochester as a successful business man, and will give his entire time and attention to the financial and office management, thus enabling Mr. Schaefer to also give his entire attention to the manufacturing and practical management. With the most complete and modern equipment in this country for the manufacture of the above mentioned goods, coupled with twenty-six years' practical experience in their manufacture, besides continuing with the same force of skilled workmen, also the same force of representatives long connected with Mr. Schaefer—W. Hetherington, H. W. Wermer, H. R. Boyes, B. B. Lynch and J. P. Pollock, and with the best facilities for the purchase of material, the new company feel assured of success. The policy of giving best values and goods that will compare with samples shown, which has resulted in a fast increasing and satisfactory business, will also be strictly adhered to.

BUILDING AN ADDITION TO THEIR PLANT.

YORK WAGON & GEAR CO., of York, Pa., are building a three-story brick addition, 49 x 80 feet, to be used for office, crating room and storage, also a new power house, 36 x 39 feet, with new 125 horse power boiler and 100 horse power engine. This concern is very busy, and are constantly expending. They are getting out a new catalogue which will soon be ready for distribution.

WILL BE AT THE DEALERS' CONVENTION.

DURING the Dealers' Convention, October 14 to 19, to be held in New York City, William H. Horstmann Co., manufacturers of fine special cloths, silk, broad and seaming and basting laces, fringes and textile trimmings, will be represented by their manager for this department, John F. Kruse, whose headquarters will be at the Manhattan Hotel, Forty-second street and Madison avenue.

MOVED INTO LARGER QUARTERS.

H. A. HORTON, the well known manufacturer of carriage and automobile woodwork of New Haven, Conn., having outgrown his present location, 28 Artizan street, has leased the large three-story building, 127 to 131 Park street, where with increased facilities, new and improved machinery, and skilled workmen, he will be better prepared than ever to turn out the highest grades of all kinds of work in his line, particularly in the line of carriages ironed in the white. Mr. Horton is a skilled bodymaker, draftsman and designer; he has held positions of trust for years in many of the largest firms in his line. He has been in business for himself for the last four years and during that time has met with phenomenal success.

VICTOR TIRES.

ON September 15 Samuel Siddall assumed management of sales of the Victor Rubber Tire Co., Springfield, O. Mr. Siddall was formerly district sales agent of the American Steel Hoop Co., with offices at Cincinnati, O. His energy and business sagacity have won for him many friends in manufacturing circles in the Middle West. We think we are safe in saying that Mr. Siddall will be a valuable addition to the Victor company, and we also believe his connection is a fortunate one for both the Victor company and their customers.

DALZELL AXLE CO.

THE name of Dalzell has so long been connected with carriage axles that the mere mention of the name suggests the article manufactured. Not only has this name been so strongly linked with axles, but it has been synonymous of A1 stock as well. The company manufacture specialties of high grade as well as the popular standard coach and light carriage axles. No man ever made a mistake when he bought Dalzell axles.

BURBANK CARRIAGE CO.

LAST month the Burbank Carriage Co., Amesbury, Mass., sent out engravings of some of their leading styles for the fall and winter of 1901, showing a line of station wagons and rockaways, which they guarantee to be absolutely correct both in finish and appointment. A postal card will procure these engravings with full details for you if you will mention this notice.

BENTEL & MARGEDANT CO.

THE demand for the carriage and wagon wood working machinery manufactured by the Bentel & Margedant Co., Hamilton, O., is increasing rapidly. They have several new machines of their own invention, which are doing much toward facilitating the manufacture of vehicles. The company are now far behind on orders, but are building a large addition to their plant which will soon be completed. With the increased room they will be able to cope with the growing demand for their machines.

A PROSPEROUS IOWA COMPANY.

THE Buffington-Wheel Works, of Burlington, Iowa, have doubled their capital stock and have contracted for such material enlargements and betterments as will enable them in the future to put out double the amount of their product and, if possible, improve the character of the work. New machinery, of the most modern type, is being put in place as fast as the experts can do it. Contracts are let for the new buildings and additions, and they are in hopes that the new structures will all be completed and the new machinery in place by the first of January at farthest. One of the new departments to be added will be devoted entirely to welding tires by machinery and placing them on the wheel. Some idea of the character of this improvement can be surmised when it is stated that a new three-story brick building, 30 x 50 feet, will be necessary for this one feature. W. G. Mercer, the general manager of the concern, has been unceasing in his efforts to make the Buffington the best. The famous hickory forests of Arkansas, Tennessee, Indiana and Ohio have been drawn upon for the best wood. How well he has succeeded is tested by the fact that for the past year every available resource of the factory has been strained, the men worked overtime and every inch of space utilized, and they are to-day behind their orders.

WRITE YOUR NAMES PLAINLY.

IF correspondents would be one half as particular in regard to writing their own names clearly as they are of other parts of their communications they would have less opportunity to blame the printer for errors. Not one man in twenty writes his name so that it can be read clearly, and yet a name is absolutely arbitrary in its wording, and no book of reference can be had that would be a reliable guide. Nothing so offends a man as to see his name in print incorrectly spelled. A little attention to this matter would save many annoyances.

DIRECTORY OF CINCINNATI HOTELS.

	From Grand Hotel.	From Music Hall.
Grand Hotel		10 blocks
Burnet House	4½ blocks	11 "
Palace Hotel	6 "	9 "
Denison Hotel	7 "	12 "
Hotel Sterling	4 "	12 "
Gerdes Hotel	2½ "	8½ "
St. Nicholas Hotel	3 "	9 "
Gibson House	5 "	11 "
Hotel Honing	4½ "	9½ "
Stag Hotel	4½ "	9½ "

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Obituary.

Clarence A. Carey.

Clarence A. Carey, junior member of the firm of A. Carey & Son, dealers in carriage makers' supplies and hardware, died at his home in Norwich, Conn., Friday, August 2, after an illness of two years from Bright's disease.

Joshua G. Gay.

Joshua G. Gay, founder of the firm of Gay & Son, carriage builders of Ottawa, Ill., died on September 5 in the eightieth year of his age. He was born in Pittsfield, Berkshire County, Massachusetts, December 11, 1821. He was one of the six children of Willard and Electa Gay. His boyhood was spent in his native town, where he was a student in the public schools until he was seventeen years old. His father was a carriage maker by trade, and the youth assisted him in his business for some time, later going to New Haven, Conn., where he served an apprenticeship to the carriage maker's trade. In 1846 he moved West, and for about one year worked at his calling in Chicago. He then went to Ottawa, and entered into partnership with Wm. Palmer, who was engaged in the manufacture of wagons, and continued in partnership with that worthy citizen some three years. Having accumulated a little capital by economy and good management, he opened a small shop of his own and commenced manufacturing carriages and various kinds of light road wagons. He was alone until 1870, and employed quite a force of men during the last years. The following decade he was associated with Col. B. S. Porter in business, that gentleman retiring from the firm in 1880, when his interest was purchased by Simeon G. Gay, who is the eldest son of our subject, and who for the past three years has been the sole proprietor of the enterprise which was founded nearly half a century ago by his esteemed father. The firm known as Gay & Son, for seventeen years, built up an extensive and remunerative business and a very desirable reputation for square dealing and for excellence of vehicles turned out in its factories. The plant is equipped with the best modern machinery, and high grade work is invariably to be found in every department of the factory.

Anthony Seeley.

Anthony Seeley, one of the best known young business men of Palmyra, died on July 25, in Rochester, after an operation for cancer of the stomach. Mr. Seeley had not been in the best of health for a few weeks, but it was not until a few days ago that it was thought his sickness was anything serious. Medical examination proved that he was suffering with cancer of the stomach, and on Tuesday he underwent an operation, which proved fatal. Deceased was the only son of Salvin Seeley, and was associated with his father in the wholesale carriage business in Palmyra. He was born in Palmyra, and was a young man who commanded in the community the respect of all who knew him, and his sudden death was a great shock to his many friends in Palmyra and vicinity. He was about 42 years of age, and is survived by a widow and his father and mother.

Albert B. Sprague.

Albert B. Sprague, of Mossup, Conn., died on July 21, after a protracted illness. Mr. Sprague was born in Warwick, R. I., October 16, 1845. His early life was spent on the farm. In the winter of 1872 Mr. Sprague came to Moosup and opened the livery stable business in what was then known as the Burgess barn. In the following spring he bought the stable near the depot of T. R. Salisbury, where for thirteen years he carried on the livery business. In connection with the sale stable he conducted an extensive carriage repository. During the dull times of '78 in Moosup, "not a spindle turning on the stream," Mr. Sprague in company with Ephriam Prentice opened a carriage repository in Norwich. They did a thriving business. He closed out the business at Norwich in the spring of '79, and since then has given his entire attention to the business in Moosup.

Daniel T. Wilson, Jr.

Daniel T. Wilson, Jr., son of Daniel T. Wilson, of 164 Rodney street, Brooklyn, N. Y., died at Lake Waramaug, in Litchfield County, Conn., on September 4, after an illness extending over a period of several years. Some months ago the young man, who was a student at the Polytechnic, was compelled to give up his studies on account of illness. He was then sent into the country in the hope of gaining strength. Although his death was not unexpected, it came as a severe blow to his parents. Mr. Wilson, Sr., is a prominent resident of the Eastern District and is president of the Hanover Club. He is the owner of the carriage manufacturing firm of Flandrau & Co., in Manhattan, and is universally esteemed by the carriage trade, who sympathize with him in his affliction. The Hub joins in expressions of regret and sympathy.

TARIFF CHANGES IN VENEZUELA.

Consul Goldschmidt of La Guayra, May 1, 1901, sends translations of recent executive decrees, as follows:

ADDITIONAL IMPORT DUTIES.

Article 1. Beginning with May 1 next, there shall be charged in all custom houses a transit duty of 25 per cent. of the taxes which each importer pays.*

Art. 2. Out of the proceeds of this 25 per cent., there shall be paid 20 per cent. to the states of the union as revenue assigned by the constitution and 5 per cent. to public works.

REDUCTION OF EXPORT DUTIES.

Whereas coffee is cheapened in foreign markets by abundant crops of other countries, causing depression among our agricultural interests, and whereas it is desired to develop the cultivation of cacao, the exports of cattle, and the planting of cotton, it is decreed:

Article 1. Beginning the 1st of May next the territorial duties, which by decree of October 3, 1900, were placed on coffee, cacao, cattle, and cotton, are abolished.

INCREASED TARIFF IN COSTA RICA.

Minister Merry writes from San José, May 4, 1901: "The Government of Costa Rica has issued a decree increasing the duties on all importations into the Republic after April 28, 1901, 50 per cent. The announcement is accompanied with the suggestion that, as an offset to this additional duty, it will be the policy of the government to reduce the export tax on coffee. The importation of foreign products during the last half of the year of 1900 has been comparatively heavy, and while the revenue may not at first be greatly increased by the decree, it will induce an economy among the people which should be an advantage to the country. Costa Rica needs, above all things, a diversity of production which will decrease her dependence upon any leading article. While this necessity is generally recognized, little progress has thus far been made in this direction, although the abundant natural resources of the country admit of many other valuable products, among them cacao, india rubber, textile fibers, tropical fruits, etc. The banana industry is being rapidly developed and also the planting of india rubber trees, the latter, however, requiring six to eight years before profitable results can be expected."

A SERMON TO ADVERTISERS.

Suppose the fish don't bit at fust,
What be yew goin' tur dew?
Chuck down yewr pole, throw out yewr bait,
An' say yewr fishin's threw?
Uv course yew hain't; yew're goin' tur fish
An' fish an' fish an' wait
Until yew've ketched yewr basket full,
An' used up all yewr bait.

Suppose success don't come at fust,
What be yew goin' tur dew?
Throw up the sponge an' kick yewr-self,
An' go tur feelin' blew?
Uv course yew hain't; yew're goin' tew fish
An' bait an' bait again;
Bimbeby success will bite yewr hook,
An' yew will pull him in.

—*Bag-ol-ogy.*

* Note by Consul.—These duties were formerly 12½ per cent.

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AMERICAN PRODUCTS ABROAD.

Consul Marshal Halstead writes from Birmingham, May 28, 1901:

American manufacturers and merchants frequently open correspondence with United States consuls with the sentence, "Being desirous of taking advantage of the rapidly growing demand for American products, etc." There is for American goods no foreign demand of the shake-the-tree kind these inquirers have in mind. The sales of our goods of all kinds are based on the merits and low prices of the articles, after energetic salesmen have made active demonstration of good points. I cannot understand the mental attitude of those American manufacturers who employ traveling salesmen to get trade in America, paying good salaries and allowing liberal sums for traveling expenses, yet wish to do business by correspondence in foreign countries. Why do they imagine they can trade successfully in Great Britain, Germany, or any other European country without employing their own travelers, when the necessity of having them is the first principle of their home business?

PECULIARITIES OF THE GERMAN TARIFF.

Consul General Frank Mason, writing from Berlin, under date of March 25, 1901, reviews new classifications under the German tariff, none of which, however, apply to goods manufactured by The Hub clientage, and says in conclusion: "The German tariff is peculiar in this respect, viz, that all fine ornamentation and decoration is liable to advance the grade and thereby increase the rate of tariff. Upholstering, however plain or limited in quantity, greatly increases the duty on a vehicle. An instance is related wherein the import duty on an office safe from a Boston maker was doubled by the fact that the door was decorated with a small decalcomanie marine picture, which raised the whole thing to the grade of decorated steel manufactures.

"The principle is general that the goods intended for export to Germany should bear no unnecessary outward decoration and that the handles of forks, shovels, and mechanics' tools should be merely varnished or covered with transparent oil finish."

MAHOGANY IN SOUTH AMERICA.

Consul-General Guenther writes from Frankfort, June 12, 1901: German technical papers state that in Central and South America the revenues of many districts depend on the skill and activity of the mahogany hunters. Mahogany trees do not grow in groups; much less are there whole forests of them. They are scattered, usually concealed in thickets. It requires skill and experience to find them. To fell a tree involves the work of two men for a whole day. On account of a thick thorny growth near the base of the tree, a scaffold is erected around it, and above this, at a height of from 10 to 15 feet, the tree is cut, so that the best part is really lost. The felled tree is then freed of branches and hauled on a rough wagon by oxen to the nearest river, where rafts are made and floated down.

COUNT STERNBERG'S TRIBUTE.

In celebration of the seventy-first birthday of Emperor Francis Joseph of Austria about sixty Austro-Hungarians, who have made their home in New York, gathered in the Union Square Hotel on Sunday afternoon, and after a dinner listened to speeches extolling the virtues of the Emperor, who is likewise the King of Hungary.

Among those present were Ferdinand Freyesleben, the Austro-Hungarian Consul in the city; Count Colloredas Mannsaslld, a lieutenant in the Austrian navy, and Chamberlain to the Emperor, and Count Adalbert Sternberg, who fought with the Boers against the British and was made a prisoner. He came from Newport to attend the celebration, and last night he returned to that city.

After Consul Freyesleben had spoken of the Emperor, Count Sternberg talked on behalf of the Austro-Hungarians in this city. After a tribute to the Emperor he praised the army of Austria, and said the highest suit of honor for an Austrian would ever be the Emperor's coat.

"Far from the land where we were born," he added, "we stand to-day on the soil of a new country with a great and awakening future. Yet, however great are the things that surround us here, however mighty the new spirit makes us feel, however we may realize how small and poor our Fatherland is compared with this pulsating and impulsive humanity and this growing country, our hearts are stirred with joy by the thoughts of our beloved Austria."

After this reference to the Austrian army Count Sternberg said: "We must not forget that in these days the war carried on by States and nations is no longer a bloody one. It is an invisible struggle for existence and progress. The army of the laborers, the traders and the workmen—that is the modern army, which, shovel in hand, obtains its prizes from mother earth. And the advance forces of culture and well being are the modern leaders on the battle field of the world's marts.

"Nowhere has this army developed so greatly, nowhere has it gained such victories as just here on this soil where it is your great fortune to reside. This soil is fertilized with freedom, is sowed with reason, and gold is the harvest. Under the flag of freedom and humanity the Americans have gained the happiest victories over all the arch enemies of mankind, and now they are marching at the head of the whole world, as pathfinders for Europe.

"That you, gentlemen, may quaff from the rich springs that are starting from this soil, that you will obtain all that is useful from America and retain all that is beautiful and pleasing from Austria —that I hope with all my heart."

HORSELESS CARRIAGES IN JAPAN.

One who has traveled in Japan cannot help realizing the peculiar advantages of the country for horseless carriages. The writer traveled through the Philippines and thence to Nagasaki and Japan. In the larger cities of the country there are numerous little carriages drawn by Japanese runners which one can hire at every corner for a nominal price. But the running power of the human motive power is, of course, limited, and if one wishes to go many miles he must provide for numerous relays. The streets of the country are too narrow for regularly sized carriages and wagons drawn by horses, although the average motor carriage could get along very well. The horses which I saw in Japan seemed to be great, awkward, slow, head-dropping animals, unfit for service in anything but freighting carts.

There are few railroad facilities, and there is no reason why the Japanese country should not be excellent for the sale of motor carriages. In fact, some have already been introduced, but the shippers have failed to provide proper mechanical facilities for keeping the mechanisms in good running service. I saw one oil engine of a motor carriage put out of service simply because of the slipping of a leather strip which connected the crank arm with the crank shaft. This left a space at Fig. 1, and the machine was caused to run unsteady. By simply unscrewing one of the nuts in the bolt and tightening the strap, this trouble would have been overcome. Again, in another case, I saw the eccentric rod of an engine device on a motor. Some one had carelessly set the screw of the cam too deep, and the shoulder of the flange was split on the cam as at Fig. 2. This was partly overcome by riveting on the piece of metal, E, but, by rights, a new cam was needed. Furthermore, one of the rods connecting with the cam, and which rod was screwed to place, was incorrectly put in position, as shown at B, the key way, C, being missed completely and the key driven like D, where it could do no good. Another sample of poor work of the Japanese machinists is shown in Fig. 3, in which the mode is presented of setting cams on either side of a box on a shaft. The sleeve of the journal is marked J, J; the spiral springs, G, G. The collars for sustaining the springs are indicated I, I. This is an odd form of device for this work, as Americans will readily realize. The Japanese machinists are always getting out some singular forms of this kind for taking the place of similar contrivances on the machinery of the carriages. They usually wait until something happens to the original part, and then they construct a similar one on their own lines. I noticed that many of the shafts in the mechanism of the motors were in a cut condition, being grooved by the set screw K, at Fig. 4. One trouble is that the horseless carriage people are not furnished with proper tools with which to work. There are no regular agencies, although there are plenty of bicycle stores. There are regular bicycle repair shops, but when an automobile breaks down, it must be run into a machine shop for the blacksmiths and engineers to experiment with.

There is a good market here for the automobiles, but some proper machinery and some tools for repairing the machines should be sent here. The roads of the country are in excellent form for wheeling. One will see women as well as men working on the roads, breaking stone and grading.

"Nagasaki."

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NOTES BY A POPULAR SALESMAN.

THE Richland Vehicle Co., of Mansfield, Ohio, seems to be like the Ohio man—right next the band wagon. The company makes no great splurge, but its goods are in demand everywhere and always give satisfaction. They make all styles of modern pleasure vehicles and show specialties of their own that capture the fancy and delight buyers of taste. They use all the modern improvements known to intelligent and up to date manufacturers and their latest catalogue is a revelation to all carriage men; all dealers should have it, and can get it, free of all cost, by dropping a line to the Richland Vehicle Co., Mansfield, Ohio.

Egbert De Freest, Couse, N. Y., carries in stock the largest variety and best selection of carriages, surreys, top buggies, pneumatic and rubber tire runabouts, farm and business wagons in Northern New York. He is the local agent for the Cortland Wagon Co., Sturtevant, Larrabee & Co., W. S. Frazier & Co., Durant, Dort & Co., Milburn Wagon Co., and other well known houses. Mr. De Freest is a stalwart, good looking gentleman, full of energy and enterprise, has a splendid eye for fine work and thinks that there's nothing too good for his trade. He is one of the heavy weights of the carriage business, tipping the beam at 275 pounds and every pound of it tells.

The finest and best appointed and stocked repository in Buffalo, N. Y., is that of Werner & Co., who also make an exhibit at the Pan-American Exposition, which is highly spoken of. The Messrs. Werner are the best known makers of heavy and light pleasure vehicles in Buffalo and also have on hand an unequalled display of the most desirable goods from the most prominent manufacturers of the United States. Buffalo and New York State are proud of Werner & Co. They have come nobly to the front in behalf of their city and state, and it will not be their fault if they do not prove that Buffalo manufactures and shows the prize vehicles of Pan-America.

William Woop, builder of high grade carriages at 246 East Seventy-ninth street, New York City, is a young man of ability, energy and in touch with the most advanced ideas of the trade. In manufacturing to order and for sale he has no superior. He devotes his entire attention to his business in all its details, is a prominent horseman and encourager of the sport of kings, and an all 'round good man. He makes a specialty of turning out the fine speeding wagons, and in addition to his own manufacture fills ordsrs for the best productions of the leading makers of the United States. It is a bye-word among carriage men that William Woop's name plate on a vehicle is a stamp of reliability.

Christie is a name that has been famous in the carriage trade of New York State for nearly three score and ten years. The firm was established in 1835 at Nyack, N. Y., and is now represented by A. E. and J. H. Christie, who nobly maintain its prestige in the trade. The Messrs. Christie manufacture and repair every species of vehicle and their work in all departments cannot be excelled. They also carry a full line of harness and a complete assortment of carriages, sleighs, etc., from the most celebrated makers of the country.

The E. L. Rice Co.—E. L. Rice, president, and Miss Gertrude Rice, secretary and treasurer, are wholesale manufacturers of fine harness, jobbers of saddlery hardware, horse, carriage and stable goods, at 75 Main street, Wellsville, N. Y. Mr. Rice is an adept in all departments of the business and Miss Rice has a mechanic's knowledge and a lady's taste in all matters that constitute a perfect carriage expert. Parties who deal with them may rely upon getting the best there is and being treated fairly.

One of the jolliest and, in every way, prosperous men in the trade is our friend William H. Weeks, of Sea Cliff, Long Island. Mr. Weeks is a practical man, who repairs everything on wheels, does all kinds of blacksmithing, scientific horseshoeing and has a big repository full of the best productions of W. N. Brockway, the Cortland Carriage Co., Sturtevant, Larrabee & Co., the Richland Vehicle Co., Cortland Cart & Carriage Co., Hoover Wagon Co., Excelsior Wagon Co. and other first class manufacturers. His lovely home is located directly opposite his carriage repository and he and his amiable wife always have a welcome for the angels of the carriage trade. They have a good opinion of the boys and intend to bring up "Orrie," the youngest and brightest scion of the family, to be a touring pilgrim. It will be some years before "Orrie" will be big enough to take the road, but he'll be there, you bet.

The Blue Front Stables and Carriage Repository, Catskill, N. Y., are owned and managed by the Horton Bros., the largest dealers in horses, carriages of all kinds and wagons on the Hudson River. Wideawake, enterprising and affable gentlemen, the Messrs. Horton do an extensive business, supplying their numerous customers with the latest novelties on wheels from all the reliable makers in the country.

The De Waters Bros., formerly Grant & De Waters, are wholesale and retail dealers in carriages, farm wagons, bicycles and agricultural implements in Elmira, N. Y., their place of business being in the Casino Building on State street. They are young, pushing men, born hustlers and are out for trade. They buy on the best terms, sell at close figures and handle only the most desirable and attractive goods in all lines. They pay especial attenton to their carriage trade and show the nicest assortment of vehicles in the city. They are local agents for H. A. Moyer, the Troy Buggy Co., Durant, Dost Co., Richland Vehicle Co. and others.

Peter Lammerto, expert mechanic, shrewd business man and one of the finest men to trade with that I have met, is located at Niagara Falls, N. Y. Mr. Lammerto makes to order and repairs carriages, buggies, wagons, cutters, etc., and also shows a well selected stock from all of the up to date firms in the country. He is local agent for the Richland Vehicle Co., the Oxford Buggy Co. and others of equal celebrity. His motto is good work and honest prices.

Geo. H. Vanderlyn, Yonkers, N. Y., is a gentleman of most excellent taste and judgment in the selection of vehicles of every degree, from a bicycle to the most magnificent of coaches. He is the accredited agent of the most famous firms in Amesbury, Mass.; Cortland and Watertown, N. Y., and Ohio. His long business experience has qualified him to select just what suits his trade and he always has in stock and for sale at rates that duplicate those of the dealers in the largest cities and are but a slight advance on the manufacturer's wholesale price.

The Novelty Carriage Co.—J. G. Moore, 1626 Broadway, between Forty-ninth and Fiftieth streets, New York, will buy or exchange anything on wheels. Mr. Moore is one of those debonnaire gentlemen who have a cheerful word and a genial smile for all with whom they come in contact. He transacts a large business and knows how to control and conduct it to the satisfaction of all. He never lets a buyer escape when up to date methods, the finest goods and honest terms can secure his custom. He also keeps in stock harness, horse goods and stable supplies.

FREE SCHOLARSHIPS FOR MECHANICS.

ATTENTION is called to the notice of the withdrawal of the free scholarship offer recently made by the American School of Correspondence. This is such an unusual opportunity for obtaining a technical education by correspondence that no ambitious mechanic should pass it by.

The American School of Correspondence is situated in Boston and is claimed to be the only correspondence school in the country making a specialty of steam, electrical and mechanical engineering, heating, ventilating and plumbing, and mechanical drawing. A careful inspection of the school's instruction papers convinces one of the painstaking thoroughness and accuracy which distinguishes the work of this New England institution. The school is chartered by the Commonwealth of Massachusetts, and enjoys the respect and confidence of thousands of earnest students throughout the United States. Many of these are graduates from the leading technical schools, who enrol for the purpose of taking up subjects not included in the courses at college. The instructors are all graduates of leading scientific schools, and have had valuable experience along engineering lines—a number being on the instruction staff of the great technical schools for which Boston is famous. The courses have been carefully laid out by prominent educators and engineering experts, and embrace every subject required by the up to date engineer and mechanic in order to have complete mastery over the theoretical details of his daily work. The school was founded to give high grade instruction to those men who have been compelled by adverse circumstances to leave school at an early age in order to earn a living. With this idea in view, the tuition has been purposely placed very low so that no wage earner shall be debarred from receiving the benefit of such a course. By taking advantage of the school's generous offer, the ambitious mechanic who can furnish proper recommendations may receive a thorough technical education by merely devoting his spare moments to systematic home study. A postal card addressed to the American School of Correspondence, Boston, Mass., will procure a handsome handbook describing its methods and courses and giving letters from graduates expressing the results of their experience.

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PATENTS RELATING TO THE CARRIAGE TRADE.

665,898—Rubber Tire for Vehicles—Wm. R. Giddeon, Knoxville, Tenn.
666,136—Motor Vehicle—Frederick E. and C. B. Grout, Orange, Mass.
666,193—Tire-heater—Isaac Harvey, assignor of one-half to L. C. Williams, Hartley, Ia.
665,911—Vehicle Wheel—James H. Jackson, Keady, Canada.
665,930—Draft Device for Vehicles—John W. Porter, Viola, Kan.
666,239—Motor Vehicle—Clarence A. Tileston, Binghamton, N. Y.
665,944—Tire Shrinker—Wm. Van Gist, Sparta, Tenn.
666,081—Propelling and Steering Mechanism for Vehicles—Wm. H. Williams, Jericho, N. Y.

Copies of above patents may be obtained for 10 cents each by addressing John A. Saul, Solicitor of Patents, Fendall Building, Washington, D. C.

666,592—Running Frame for Vehicles—Harold B. Atkins, Roselle, N. J., assignor to Columbia and Electric Vehicle Co., Jersey City, N. J., and Hartford, Conn.
666,488—Wheel-lubricator—Frederick Burie, assignor to P. Ramer, Bedford, O.
666,303—Storage Battery Transfer Car—George H. Condict, assignor to Electric Vehicle Co., New York, N. Y.
666,620—Thill Coupling—Joseph Emenaker, assignor of one-half to F. M. Fitterer, Lawrenceburg, Ind.
666,367—Motor-vehicle—Jay W. Farnoff, assignor of two-thirds to H. Koons, Buffalo, N. Y.
666,308—Steering Mechanism for Motor Vehicles—Jay W. Farnoff, assignor of two-thirds to H. Koons, Buffalo, N. Y.
666,614—Tongue Support—Orrin Gardner, East Groveland, and J. L. Martin, Clarence, N. Y.
666,606—Shaft Coupling for Vehicles—Emory F. Holmes, Columbus, O.
666,553—Motor—Edward E. Pettee and J. J. McCutchan, New York, N. Y., assignors, by mesne assignments to Automatic Air Carriage Co., of New York.
666,554—Motor-vehicle—Edward E. Pettee, and J. J. McCutchan, New York, N. Y., assignors, by mesne assignments, to Automatic Air Carriage Co., of New York.
666,440—Motor Vehicle—Gustaf L. Reenstierna, Winchester, Mass., assignor to Winchester Manufacturing Company, Dover, N. H.
666,565—Steam Engine—Henry F. Shaw, Roxbury, assignor to Shaw Motor-vehicle Co., Boston, Mass.
666,567—Dumping Box for Wagons—Charles Skone, Minneapolis, Minn.
666,610—Interchangeable Running Gear for Vehicles—Wm. C. Sloan, Camden, N. J.
666,330—Tire-securing Device—Olin B. Smith, Chicago, Ill.
666,571—Wheel for Vehicles—Herbert L. Stillman, Westerly, R. I.
666,366—Wagon-standard—Martin V. B. Trent, Iberia, Mo.
666,582—Farm-wagon Body—Benjamin F. Washburne, Rock Falls, Ill.
666,401—Cushion Tire—Elvira A. Whitney, Cranston, R. I.
33,952—Design, Holdback-clip for Vehicle Shafts—Frank O. Brown, Beverly, Mass.
33,973—Design, Frame for Motor Vehicles—Edwin R. Thomas, H. Pokorney, and C. Thorden, Buffalo, N. Y.; said Pokorney and Thorden assignors to said Thomas.
666,893—Vehicle—Frank L. Beamond, Sutton-Coldfield, England.
666,955—Speed-wagon—Richard T. Callahan, Buffalo, N. Y.
666,739—Motor-vehicle—Wm. F. Davis, Milwaukee, Wis.
666,956—Electric Connecting Handle for Automobiles—Edward N. Dickerson, Stovall, N. C.
666,746—Pneumatic Tire—Henry G. Fiske, New York, N. Y., assignor by mesne assignments to Columbia and Electric Vehicle Co., Jersey City, N. J., and Hartford, Conn.
667,146—Steering Gear for Vehicles—Wm. L. Garrels, St. Louis, and C. Kimball, Kirkwood, Mo.
666,750—Elliptic Spring for Vehicles—Max P. Gerbing, Wentworth, Mo.
666,965—Vehicle Brake—John H. Leonhardt, Baltimore, Md.
666,767—Carriage Pole—Hermann F. Matthas, Dresden, Germany.
666,773—Steering Mechanism for Vehicles—Philip Neu, Elgin, Ill.
666,775—Propelling Mechanism for Vehicles—George B. Nussbaum, Lock Seventeen, assignor to G. G. Fackler, New Philadelphia, Ohio.
667,038—Wagon-tongue Support—Frederick M. Rubee, Marshalltown, Ia.
667,042—Trace Holder—Oscar L. Sprague, assignor of one-half to P. D. Bishop, Andover, O.
666,725—Rubber Tire for Vehicle Wheels—Rollin S. Woodruff, New Haven, Conn.
34,005—Design, Felly—Alfred Ducasble, Paris, France, assignor to Manufactured Rubber Co.
34,006—Design, Felly—Alfred Ducasble, Paris, France, assignor to Manufactured Rubber Co.
34,007—Design, Wear Plate for Vehicles—Elwood Grubb, Talleyrand, Ia.
34,003—Design, Speed-wagon Axle—Carl Segna, New York, N. Y.
34,002—Design, Tire—John M. Sweet, assignor, by mesne assignments, to Batavia Rubber Tire Co., Batavia, N. Y.
667,280—Vehicle—Jesse M. Adkins and W. G. Blair, Blair's Mills, Ky.
667,179—Thill Coupling—George C. Bastable, Bethesda, O.
667,360—Pole Head Device for Carriages—Thomas H. Brigg, London, assignor of seven-twentieths to C. W. Walker, Bradford, England.
667,189—Battery Box or Tray for Motor Vehicles—George H. Condict, New York, N. Y., assignor, by mesne assignments, to Columbia and Electric Vehicle Co., Jersey City, N. J., and Hartford, Conn.
667,393—Fifth Wheel for Vehicles—Emory F. Holmes, assignor of one-fourth to J. L. Brooks, Columbus, Ga.
667,221—Vehicle Wheel—Arthur S. Hyde, Hartford, Conn.
667,237—Stock Wagon—Hans C. F. and C. A. Loptien, Sycamore, Ill.
667,400—Vehicle Wheel—Alfred S. Moore, Galt, Cal.
667,237—Stock Wagon—Hans C. F. and C. A. Loptien, Sycamore, Ill.
667,400—Vehicle Wheel—Alfred S. Moore, Galt, Cal.
667,241—Wagon Nut Lock—Patrick J. Moran, Memphis, Tenn.
667,348—Tire for Vehicle Wheels—Ferdinand W. Starr, assignor of three-fourths to J. B. Houston, W. S., and J. C. LeFevre, Springfield, O.
667,475—Combination Wagon and Tent—George B. Winter and F. J. Stohwasser, London, England.
34,041—Design, Speed Wagon Body—Carl Segna, New York, N. Y.
668,082—Vehicle Axle Bearing—Adolph D. Bloch, Mobile, Ala.
668,009—Attachment for Motor Vehicles—Benjamin E. Dakin, Washington, D. C.
668,038—Adjustable Seat for Wagons—Hilary Duhamel, New York, N. Y.
667,875—Running Gear for Vehicles—Wm. L. Garrels, St. Louis, and C. Kimball, Kirkwood, Mo., assignors to Electric Vehicle Co., New York, N. Y., and Jersey City, N. J.
667,911—Motor-vehicle—Wm. A. Hatcher, assignor to J. W. Packard, Warren, O.
667,909—Motor Vehicle Frame—Wm. A. Hatcher and J. W. Packard, Warren, O.; said Hatcher assignor to said Packard.
667-881—Road-vehicle—Charles A. Immler, Akron, O.
667,842—Steering Mechanism for Vehicles—Horace S. Ingalls, Saugus, Miss.
667,778—Vehicle Axle—Ellsworth D. Ives, Norfolk, assignor of one-half to M. N. Woodruff, Southington, Conn.
667,707—Dumping Wagon—George Kautz, Sr., Albany, N. Y.
667,884—Singletree Clip—Finis E. Lack, Paducah, Ky.
667,885—Neck-yoke Center—Finis E. Lack, Paducah, Ky.
668,106—Steering Mechanism for Ships or Vehicles—George A. Long, Boston, Mass.
667,984—Wheel Hub—Robert W. Macculloch, West Kirby, and F. Gash, Douglas, England.
667,734—Tire Setter—Mathias A. Patton, Livingston, Mont.
668,058—Motor—Henry F. Shaw, assignor to Shaw Motor Vehicle Co., Boston, Mass.
668,067—Rubber Tire Setter—Reuben O. Stutsman, assignor to Bartholomew Co., Des Moines, Ia.
667,833—Tongue or Pole Socket—Charles Vanarsdall, Enumclaw, Wash.
667,858—Motor Bicycle—Frank B. Widmayer, New York, N. Y.
668,073—Motor-vehicle—Wm. O. Worth, Chicago, Ill., assignor of two-thirds to W. R. Donaldson, Louisville, Ky., and H. W. Kellogg, Battle Creek, Mich.
668,074—Motor-vehicle—Wm. O. Worth, assignor of two-thirds to W. R. Donaldson, Chicago, Ill., and H. W. Kellogg, Battle Creek, Mich.
668,076—Detachable Tread Shoe for Vehicle Wheels—Wm. O. Worth and W. R. Donaldson, Chicago, Ill., assignors of one-third to H. W. Kellogg, Battle Creek, Mich.
34,071—Design, Socket-piece for Automobile Frames—Harry M. Wells, Bridgeport, Conn., assignor to Locomobile Co. of America, New York, N. Y.
668,398—Pneumatic Tire for Wheels—John Adair, Waterford, Ireland.
668,434—Platform Wagon—Timothy B. Benedict, La Grange, Mich.
668,439—Boiler for Automobiles—Myron H. Detrick, Sterling, Ill.
668,443—Vehicle Spring and Hanger—George T. Glover, Chicago, Ill.
668,523—Hub-fastening—Thomas H. Kavanagh and G. E. Arthur Holland, Minn.
668,449—Wheelright's Implement—Michael M. May, Rulo, assignor of one-half to W. Goldner, Falls City, Neb.
668,262—Motor-vehicle—David N. Melvin, Linoleumville, N. Y.
668,383—Wheel Bushing—Conrad Miller, Leadville, Col.
668,384—Vehicle Wheel—Fred W. Morgan, Chicago, Ill.
668,385—Elastic Tired Vehicle Wheel—Fred. W. Morgan, Chicago, Ill.
668,387—Machine for Uniting Nuts and Bolts of Tires, Etc.—Ulysses G. Neale, Agawam, Mass.
668,338—Tongue Support—Michael M. Nolt, Earl Township, assignor of one-half to A. H. Weaver, Blue Ball, Pa.
668,218—Motor-vehicle—George L. Roby, Dayton, O.
668,566—Convertible Vehicle—Alfred C. Sage, Abbotsford, assignor to G. G. Turri, Melbourne, Victoria.
668,590—Ball-bearing for Vehicle Wheels—Wm. R. Spruill, Sr., and Wm. R., Jr., Columbia, N. C.
668,299—Spoke-shave—Justua A. Traut, New Britain, Conn.
668,548—Tire Heater—Wm. Vogel, Fort Dodge, Ia.
670,526—Sled-propeller—Archie M. Banks, Tacoma, Washington.
670,664—Wheel for Horseless Carriages—John Caulfield, Brooklyn, N. Y.

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670,755—Wagon Brake—Robert F. Armstrong, Sewellsville, O.
670,491—Thill Coupling—Thomas J. Gibbons, Ligonier, Ind.
670,776—Running Gear for Automobiles—Lucius T. Gibbs, assignor to Vehicle Equipment Co., Brooklyn, N. Y.
670,560—Vehicle Brake—Otto Heylmann, Fallbrook, Cal.
670,782—Automatic Wagon Brake—Thomas Howie, Vinita, Ind. Ter.
670,480—Vehicle Hub—John W. Kelly and E. J. Keena, Jackson, Mich.
11,899—Reissue, Means for Propulsion of Vehicles by Electricity—Frederick J. Newman and J. Ledwinka, Chicago, Ill., assignors, by mesne assignments, to Hub Motor Co., of New Jersey.
670,596—Vehicle Axle—Jacob Parr, Irwin, Pa.
670,724—Vehicle Running Gear—Martin Payne, Troy, N. Y.
670,544—Vehicle Tire—Jacob Pfeiffer, Akron, O.
670,434—Reach Coupling—Louis T. Rector, Cuba, Ill.
670,435—Harness Attachment for Poles and Shafts—Wm. F. Schatz, South San Diego, Cal.
670,738—Wagon Brake—Frank C. Schmidt and W. H. Haas, Blakely, Minn.
670,824—Vehicle Wheel—Lewis E. Thompson, McKinley, Ia.
670,866—Pneumatic Tire—Pardon W. Tillinghast, Edgewood, R. I.
670,746—Motor Road Vehicle—Josef Völlmer, Berlin, Germany.
34,289—Design, Hub Flange—Charles Minshall, assignor to Standard Wheel Co., Terre Haute, Ind.
34,290—Design, Hub Flange—Charles Minshall, assignor to Standard Wheel Co., Terre Haute, Ind.
671,364—Wagon—Charles A. Babb, assignor of one-half to O. T. Botts, Meadville, O.
671,365—Pneumatic Tire—Adam H. Beck, deceased, Washington, D. C., K. Beck, administratrix.
671,328—Fifth Wheel—Christoper G. Burdick, Antigo, Wis.
670,948—Brake for Vehicles—Adolph G. Carlson, Chicago, Ill.
671,103—Tire for Vehicle Wheels—John W. D. Carslaw, Chicago, Ill.
671,332—Vehicle Tire—Arthur T. Collier, St. Albans, assignor of one-half to E. O. Goss, London, England.
670,983—Locking and Releasing Means for Vehicle Brakes—Charles S. Corson and C. Schwimbersky, New York, N. Y.
671,206—Vehicle—Frank H. Cotes, Peoria, Ill.
671,014—Vehicle Axle—John P. Council, Jr., Wananish, assignor to White Patent Axle & Hub Co., Wilmington, N. C.
671,187—Wagon—Thompson V. Edwards, assignor to F. H. Cotes, Peoria, Ill.
670,990—Wagon-box Shield—Wilbur G. Houk, Crawfordsville, Ind.
671,214—Automobile—Silas C. Judd, assignor to F. A. Camp, New York, N. Y.
671,383—Vehicle Lamp—Wm. S. Kirk, Jr., Philadelphia, Pa.
671,112—Vehicle Axle and Bearing—Peter B. Mathiason, Los Angeles, Cal.
671,141—Cushion-tire for Vehicles—George Millen, San Antonio, Tex.
671,290—Dumping Wagon—Ernst Muller, New York, N. Y.
670,966—Explosive Motor for Vehicles—John Pender, Brunswick, Victoria.
670,972—Self-propelled Vehicle—Maxwell M. Smith, London, England.
671,357—Repair-tool for Elastic Tires—Charles E. Strouse, Montgomery, Pa.
671,121—Means for Fastening Resilient Tires to Wheels—Wm. H. Tuttle, Hartford, Conn.
671,036—Driving Mechanism for Automobiles—Wm. Van Wagoner, assignor to Century Motor Co., Syracuse, N. Y.
671,076—Wagon-pole Support—John F. Whitman, assignor of one-half to W. Sewell, Belvidere, Ill.
34,327—Design, Axle-frame for Motor Vehicles—Wm. J. and G. Lane, Poughkeepsie, N. Y.
671,716—Tire-upsetting Machine—Robert Bates, Grand Rapids, Wis.
671,535—Pneumatic Tire and Wheel Rim Therefor—Robert Bryan-Haymes, Kingsbridge, England.
671,687—Brace for Motors of Self-propelled Vehicles—James H. Bullard, Springfield, assignor to Overman Automobile Co., Chicopee, Mass.
671,585—Vehicle Tire—James Coomber, assignor to Wemaka Rubber Tire Co., Chicago, Ill.
671,856—Truck for Automarettes—John W. Darley, Jr., Baltimore, Md.
671,721—Gearing for Automobiles—Frank L. Dyer, Montclair, N. J., assignor of one-fourth to L. H. Dyer, Washington, D. C.
671,478—Vehicle Driving Mechanism—Johannes Grimme, Bochum, Germany.
671,549—Elastic Tire for Vehicles—Frank E. Hall, Quincy, Mass.
671,553—Vehicle Shaft—Joseph B. Haug, St. Benedict, Kan.
671,698—Tongue Support for Vehicles—Benjamin F. Hennessey, Morgantown, W. Va.
671,700—Tire Fastener—Wm. Jennings, Montreal, Canada.
671,701—Tire Fastener—Wm. Jennings, Montreal, Canada.
671,889—Adjustable Rubber Tire Setter—John A. Johnson, assignor of one-half to J. P. Thurman, Barnesville, Ga.
671,673—Variable Speed Reversing Drive for Automobiles—Whitcomb L. Judson, Chicago, Ill.
671,601—Vehicle Device for Hitching Horses—Ida N. Lachner, Baker City, Ore.
671,627—Dumping Wagon—Earl P. Le Gore, Philadelphia, Pa.
671,933—Means for Disposing of Exhaust Steam from Vehicle Motors—Frank Milne and G. T. Killam, Everett, Mass.
671,863—Wagon—Samuel L. Mitchell, Talawah, Miss.
671,934—Gas-engine or Similar Motor—Carl C. Riotte and E. A. Riotte, New York, N. Y., assignor, by mesne assignments, to U. S. Long Distance Automobile Co., Elizabeth, N. J.
671,869—Means for Securing Vehicle Wheels to Axle Arms—Robert D. Seibert, Millville, Pa.
671,782—Tube Sheet for Boilers—John C. Speirs, Worcester, Mass., assignor to Locomobile Co. of America, New York, N. Y.
671,783—Steam Engine—John C. Speirs, Bridgeport, Conn., assignor to Locomobile Co. of America, New York, N. Y.
671,737—Clutch for Motor Wheels—John A. Stone, Chicago, Ill.
671,842—Spoke Driving Machine—Ferdniand Unckrich, assignor to Flickinger Co., Galion, O.
671,532—Automobile Vehicle—John H. Warren and J. A. Hoffman, Cleveland, O.
671,849—Means for Securing Elastic Tires to Wheels—Wm. F. Williams, London, England.
671,575—Motor Carriage—Wm. J. Woosley, San Francisco, Cal.
672,253—Vehicle Tire—Lemuel E. Allen, assignor to A. R. Allen and W. J. Poyser, Canton, O.
672,304—Spring Tire—John Arn, Columbus, O.
672,119—Tire and Means for Securing Same in Place—Wm. F. Beasley, Plymouth, N. C.
672,427—Boiler Feeder—James H. Bullard, Springfield, assignor to Overman Automobile Co., Chicopee, Mass.
672,428—Running Frame for Vehicles—James H. Bullard, Springfield, assignor to Overman Automobile Co., Chicopee, Mass.
672,030—Motor Vehicle—Daniel T. Clark, Cleveland, O.
672,031—Wheel Retainer—Joseph N. Clouse, assignor to A. Boeker, St. Louis, Mo.
672,075—Steering Gear for Vehicles—Elias H. Cowart, San Francisco, Cal.
672,098—Adjustable Axle for Wheels—Charles L. Fahnesstock, Winchester, Va.
672,061—Tire Bolt Wrench—Wm. G. Gotschall, assignor of one-half to E. McFarland, Dunrieth, Ind.
672,273—Lumber Wagon—John T. Hovis, Clintonville, Pa.
672,962—Thill Coupling—Robert W. Howell, assignor of one-half to H. M. Howard, Palmyra, Mo.
672,040—Carriage Curtain Knob—Fred. A. Neider, Augusta, Ky.
672,007—Axle Box Fastening for Vehicles—Wm. C. Page, Eltham, New Zealand.
672,104—Apparatus for Setting Rubber Tires—Harry A. Palmer, Erie, Pa.
672,105—Apparatus for Closing Ends of Rubber Tires Together—Harry A. Palmer, Erie, Pa.
672,197—Vehicle Spring and Running Gear—Arthur L. Stevens, New York, N. Y.
672,220—Vehicle Body—Franklin Stratton, Buffalo, N. Y.
672,023—Vehicle Top Attachment—George G. Tierney, assignor of one-half to B. C. Tierney, New Hampton, Ia.
672,073—Pneumatic Tire for Vehicles—Hugh L. Warner, assignor to A. D. Clark, Dayton, O.

Copies of above patents may be obtained for 10 cents each by addressing John A. Saul, Solicitor of Patents, Fendall Building, Washington, D. C.

EXPIRED PATENTS.

THE following list of patents, trades-marks and designs of interest to our patrons are furnished by Davis & Davis, solicitors of American and foreign patents, Washington, D. C., and St. Paul Building, New York City. A copy of any of these may be had for 10 cents by sending to the above firm.

PATENTS EXPIRED AUGUST 5TH, 1901.

302,894—Axle Lubricator—W. Cole, Jr., Keokuk, Iowa.
302,997—Vehicle Spring—J. Gelvin, Mercer, Pa.
303,041—Two-Wheeled Vehicle—F. L. Perry, Bridgeport, Conn.

PATENTS EXPIRED AUGUST 9, 1901.

303,258—Vehicle Running Gear—E. Berry, Henderson, Ky.
303,268—Wheel Hub—S. Davis, Philadelphia, Pa.
303,275—Wagon End Gate—George W. Friend, Tarkio, Mo.
303,428—Two-Wheeled Vehicle—T. J. Gibbons, Union City, Ind., assignor of one-half to T. Jones, same place.

PATENTS EXPIRED AUGUST 12, 1901.

303,622—Two-Wheeled Vehicle—J. Constant, Decatur, Ill.
303,662—Spring Coupling for Vehicles—H. W. Pell, Rome, N. Y.
303,680—Carriage Spring—A. A. Stinson, Montpelier, Vt.
303,718—Jump Seat for Wagons—J. F. Fowler, Alliance, Ohio.
303,738—Two-Wheeled Vehicle—F. A. Knox, Woodland, Cal.
303,831—Running Gears for Vehicle—M. Frear, Rosendale, N. Y., a signor of one-half to R. Snyder, same place.

PATENTS EXPIRED AUGUST 26TH, 1901.

303,981—Side Spring Vehicle—D. Buckler and E. N. Pelzer, Ionia, Mich., assignors of one-half to R. D. Cain and J. Tawbert, same place.
304,015—Wagon Top Frame—F. M. Mahan, Chicago, Ill.
304,066—Wagon Bolster Spring—G. E. Blaine, Chattanooga, Tenn., assignor to T. S. King, Atlanta, Ga.
304,075—Two-Wheeled Vehicle—W. Clucas, Cleveland, Ohio.

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Trade News.

BY UNCLE SAM.

CALIFORNIA.

LIVERMORE—A. B. Arnold has opened a carriage paint shop in the old Herald office.

COLORADO.

PUEBLO—The Steel Wheel and Wagon Co. have advertised for bids for the construction of their new plant. The main building is to be of brick, size 80x300 feet.

CONNECTICUT.

NEW HAVEN—The Fisher Auto-Truck Co., of Hoboken, N. J., are considering the location of their plant here.

RIDGEFIELD—H. K. Scott, Jr., has purchased the carriage shop of John Way, and will conduct it as a carriage factory on a modern basis.

DISTRICT OF COLUMBIA.

WASHINGTON—Proceedings have been instituted for the dissolution of the partnership existing between Geo. W. Taylor and Harry W. Robinson. They were in the carriage and harness business.

FLORIDA.

ARCADIA—Arcadia Wagon Works Co. organized.

MADISON—The Howley-Smith Co. incorporated with capital stock of $10,000 to deal in carriages, harness, etc. S. A. Hinley, John H. Smith, C. B. Ashley and A. E. Fraleigh are among the stockholders.

GEORGIA.

VALDOSTA—The Roberts Cranford-Dasher Co. have contracted for the erection of a new carriage factory. They expect to employ about fifty men. This will make the third vehicle plant at this place.

INDIANA.

AURORA—The Ohio Valley Buggy Co. incorporated, capital stock $10,000. Directors, R. E. Friedrich, J. W. Herron, Jr., J. E. Friedrich, G. A. Herron and M. J. Hill.

GREENSBURG—The Lincoln Carriage Co. have found it necessary to enlarge their factory and now have in course of construction and nearly finished a new building 50x150 feet in size, which will be used as a repository and storehouse.

LA PORTE—The La Porte Carriage Co. have let the contract for the erection of their four-story brick building, size 50x100 feet. The old factory will be moved and used as a warehouse.

Henry Bros. have contracted for a new building, to be used as a carriage repository and livery.

RUSHVILLE—The Sterling Buggy Co. have absorbed the Poundstone Carriage Co., and incorporated for $40,000. C. H. Lambert holds 50 per cent. and E. B. Poundstone and George Lambert 25 per cent of the stock. President and general manager, C. H. Lambert; vice-president, George Lambert; secretary-treasurer, E. B. Poundstone.

ILLINOIS.

MOLINE—The Mutual Wheel Co. have just completed a three-story brick building, 60 feet square, and have added a story to their brick dry house.

PEORIA—The Peoria Buggy Manufacturing Co. have increased capital stock from $50,000 to $100,000. One-half of the new stock was taken by C. C. Christie and J. C. Firth.

SPRINGFIELD—The Jewel Carriage Co. of Carthage, O., with a capitalization of $100,000 in that State, has incorporated for $7,000 in Illinois.

IOWA.

DES MOINES—J. W. Beggs, of Farmington, has arranged to start the manufacture of wagons here. The factory will be of brick; size, 60x200 feet.

SHENANDOAH—Halstead & Haskins have opened a carriage business. R. W. Haskins of this firm is also in the same line at Clarinda.

KENTUCKY.

HOPKINSVILLE—Forbes & Bros., wagon manufacturers, suffered from fire on September 20. Loss about $10,000. Insured.

MAINE.

BUCKSPORT—David Farmer, who for a long time has been employed at the McAllister shop, has started in the carriage business on his own account.

MASSACHUSETTS.

BOSTON—Ferd. F. French & Co., who are successors to Wm. P. Sargent & Co., have decided to close out their business at 14-24 Sudbury street.

METHUEN—Peter Graham and James J. May have purchased the S. J. Pedler carriage and blacksmith business. These gentlemen have been in the employ of Mr. Pedler for a number of years.

SOUTH FRAMINGHAM—Alfred M. Eames & Co., wheel manufacturers, are about to add another story to the main buildings of their plant, making same four stories in height. Increased demand for their products the cause.

TAUNTON—Taunton Automobile Co. incorporated for $200,000, to manufacture horseless vehicles. President, Daniel L. Brownell; vice-president, Chas. B. Edwards; treasurer and superintendent, Edwin L. Sargent; manager, Everett S. Cameron; secretary, Chester H. Morse.

MICHIGAN.

DETROIT—Roehm & Davison, Limited, have incorporated with capital stock of $200,000, fully paid. The stock is held as follows: Herman Roehm, $75,000; Clement A. Davison, $75,000; Charles M. Roehm, $40,000, and John A. Goodwillie, $10,000. They will deal in carriages and carriage hardware.

Detroit Forging Co., incorporated for $100,000, to manufacture carriage forgings.

A. Fisher, proprietor of the Fisher Carriage Co., is erecting a three-story brick factory at corner of Fort and Sixth streets.

Beamer & Hauser have dissolved partnership. Mr. Hauser will continue the business under the name of Henry Hauser & Co.

FLINT—We are informed that the W. F. Stewart Co. have closed a contract with the Banner Buggy Co., of St. Louis, Mo., for 125,000 buggy bodies, to be furnished within the next three years.

GRAND RAPIDS—The Belknap Wagon Co. say their sleigh trade is increasing every year, and that they will turn out about 2,000 heavy sleighs this winter.

JACKSON—The Granger-Hayden Carriage Co. are building a large addition to their factory.

LANSING—Auto-Body Co., of this place, incorporated. Capital, $12,000.

NILES—It is probable that the Harper Buggy Co., of Columbia City, Ind., will locate a branch of their factory here.

PONTIAC—The recently organized Standard Vehicle Co. are erecting a four-story factory. Their capital is $35,000, fully paid. H. C. Kudner,, who formerly owned the Lapeer Press, is president. This company is getting into shape to be ready for next season's business, and every indication points toward a successful career.

The Crescent Carriage Co., incorporated for $25,000. A majority of the stockholders are also interested in the Pontiac Buggy Co. and the Dunlap Vehicle Co.

O. J. Beaudett & Co. had a $60,000 fire at their carriage body factory on September 15.

SOUTH HAVEN—John Quackenbush and David Scott have purchased the wagon and blacksmith business of N. G. Reynoids. The name of the firm will be Quackenbush & Scott.

MISSOURI.

ST. LOUIS—We have received notice that after September 1 the business of Mansur & Tebbetts Implement Co. will be conducted under the name of John Deere Plow Co. This applies to the St. Louis, Dallas, Tex., and New Orleans, La., offices. The management will remain the same as heretofore.

NEW HAMPSHIRE.

BERLIN—A. A. Fancy will soon commence building a new carriage and blacksmith shop on Mechanic street.

KEENE—Robert C. Jones, carriage manufacturer, is enlarging his plant.

NEW JERSEY.

NEWARK—Wood Loco Vehicle Co., incorporated for $300,000, to manufacture horseless carriages. Principal office, 224 Market street. Incorporators: Joseph C. Wood, D. Holcomb Rittenhouse and J. Roe Judd.

NEW YORK.

ALBANY—Wm. J. Moore, carriage and harness dealer, at 26-28 Hudson avenue, made a general assignment for the benefit of his creditors on September 20, to Charles B. Templeton.

BUFFALO—David Rieman, Jr., carriage maker at 146 Clinton street, filed a petition in bankruptcy on September 13. His total liabilities are given as $74,020.86. He made preferred indebtedness $324.13, while the unsecured claims amounted to $20,091.23 and secured claims $53,605.50. The assets are $20,217.67, and of this value of stock in trade is given as $660, open accounts $8,717.67, and real estate $10,840.00.

CANASERAGA—Cyrus Pelton has opened a carriage painting shop on East Main street.

CANASTOTA—The Watson Wagon Co. have increased capital stock from $40,000 to $50,000.

CASTILE—Cole & Andrus, carriage dealers, suffered a loss of $15,000 by fire on September 17. Insurance, $10,000.

CORTLAND—Plans for the opening of the H. M. Whitney Wagon Co.'s factory have been completed, and it is understood the plant will soon be in operation again. A new company has been organized with sufficient capital to carry on the enterprise. The

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factory is in first class condition, and practically no repairs will be necessary. It is now the intention to manufacture a good grade of vehicles and sell them at popular prices.

GROTON—Messrs. F. & B. Conger, who recently purchased the Groton Carriage Co., are putting up a four-story brick factory. Size, 60x150 feet. They expect to manufacture both carriages and automobiles.

HIGHLAND—The plant of Aaron Deyo, manufacturer of bent wood for carriage tops, has been sold to Mrs. Julia Ives.

MORAVIA—Atkins Wagon Co., incorporated with capital of $25,000, to manufacture and deal in vehicles. Directors: Harry M. Glen, E. J. Waldron, Wm. Atkins and Samuel Odell. The business may be moved to Seneca Falls, N. Y.

NEW YORK CITY—New York Automobile Repository incorporated with capital of $15,000. Directors: H. M. Underwood, F. N. Glover and W. E. Waltz.

John J. Farrell has been appointed temporary receiver of the Lengert Wagon Co., 302 West Fifty-third street, in proceedings for the voluntary dissolution of the corporation brought by two of the directors, Wm. J. Chaniel, president, and Joseph Kunkel, treasurer. The company was unable to meet maturing obligations and could not pay three judgments aggregating $414. The liabilities are $65,396, and nominal assets $67,256. Three days after the appointment of receiver, a petition in involuntary bankruptcy was filed by the following creditors: C. Coles Dusenbury & Son, $363; Prentiss Tool & Supply Co., $108, and the Victor Rubber Tire Co., $113, against the Lengert Wagon Co.

The Graham-Fox Motor Co. was incorporated on September 25, to manufacture motors and automobiles. Capital, $500,000. Directors: Frank A. Fox, David F. Graham, Jas. J. Thornley, Jr., C. G. Weaver and W. D. Blake.

SYRACUSE—The Stearns Steam Carriage Co., recently reorganized, will enlarge their plant and equip it with new machinery. They expect to turn out 500 automobiles next summer.

The I. A. Weston Co. have purchased the plant and business of the Janesville (N. Y.) Mfg. Co., and hereafter will conduct the business at both factories, which will be enlarged. This will enable the Weston Co. to supply the increasing demand for their axles, wheels, etc., more promptly. Messrs. Hotaling and Olcott, of the Janesville Co., are still identified with the business.

NORTH CAROLINA.

GOLDSBORO—The Goldsboro Buggy Co. have reopened their repository on Walnut street.

OHIO.

FINDLAY—O. J. Daugherty, formerly with the Findlay Carriage Co., has arranged to build a carriage factory on Main street.

HAMILTON—John Schweizer will erect a carriage factory at Fifth and High streets.

MARION—The Houghton-Merkel Co., incorporated to manufacture and deal in carriages, etc. Capital, $25,000. W. H. Houghton, president; T. J. McMurray, vice-president; A. H. Honefanger, secretary; C. E. Merkel, treasurer and general manager. They succeed the Houghton Buggy Co.

MIDDLETOWN—The Ling & Van Sickle Buggy Co. was sold on August 26, to Thomas Carroll. The business will be carried on under the old name, but neither Ling nor Van Sickle will be connected with the company.

STRUTHERS—The J. A. & D. P. Cooper Co., manufacturers of carriage gear woods and ironed parts, are making extensive additions to their factory, and increasing their power by additional boiler and engines, which will put them in position to take care of their very largely increased trade with their old-time promptness.

TOLEDO—The Hickox, Mull & Hill Co. succeed the Merrell Buggy, Implement and Steel Co.

PENNSYLVANIA.

CAMPBELLSTOWN—John W. Lineaweaver has rented the Ziegler carriage factory. It was formerly operated by Sheriff Coppenhaver.

CONNELLSVILLE—The South Connellsville plant of the Baldwin Automobile Co., closed down in August for an indefinite period. The factory has been running under a receivership for several months.

GREENVILLE—The spoke factory of D. A. Titzel was destroyed by fire on September 10.

PHILADELPHIA—Emil Insinger will erect a carriage factory at 526 Carpenter street.

TENNESSEE.

BROWNSVILLE—The Hatchie Mfg. Co. succeed the J. W. Byran Co., manufacturers of spokes. They also have a factory at Stanton, and expect to start one at Gallaway.

DYERSBURG—The Tennessee Spoke Co., which has been doing business at New Decatur for the past three years, expect to move to this place early this month.

VIRGINIA.

MARION—Took & Lincoln have erected a carriage factory.

Wants.

Help and situation wanted advertisements, one cent a word; all other advertisements in this department, 5 cents a word. Initials and figures count as words. Minimum price, 30 cents for each advertisement.

SITUATIONS WANTED.

Wanted—Position as foreman in a spoke factory. Years of experience in making wagon and buggy spokes. Reference given. Address "SPOKES," Box A77, care THE HUB.

A retired carriage maker, good address, steady habits, active, inventive and intelligent—can speak German—will accept position as salesman, or handy all-around man, or manager in some good moderate sized carriage factory. Best reference furnished. Would invest a little. Address "HANDY MAN," Box A80, care THE HUB.

An experienced and successful carriage salesman, who has a wide acquaintance among Eastern dealers, and who has just severed his connection with a prominent New York State manufacturer, would like to communicate with a wholesale carriage builder who wishes to extend trade in the Eastern territory. Best references. Write at once to "EXPERIENCED," Box A81, care THE HUB.

Manufacturers of carriages, wagons, harness, or the accessory lines, who are in need of salesmen, and who want to engage high class men able to sell goods, should write at once to P. D. RANDALL, secretary of the Carriage, Harness and Accessory Traveling Salesmen's Association, 175 State street, Springfield, Mass.

HELP WANTED.

Wanted—Several good automobile salesmen. Must be men of experience and well recommended. Address AMERICAN BICYCLE CO., Waverly Automobile Department, Indianapolis, Ind.

Wanted—A practical and experienced vehicle man, qualified to work in connection with or to take charge of sales in a large established business. Best ability and energy required, and liberal salary to right man. Address "X. Y.," Box A78, care THE HUB.

Wanted—Assistant buyer, well posted in carriage material. Must be up to date and with some experience, and competent under large responsibility. Address "Z." Box A79, care THE HUB.

Wanted—Blacksmith foreman. Man with experience on hammers and getting out forms. Factory building 10,000 to 12,000 jobs. Address F. A. AMES & CO., Ownesboro, Ky.

Wanted—Wood shop foreman in shop with complete machine room, building 10,000 to 12,000 jobs. Address F. A. AMES & CO., Owensboro, Ky.

Wanted—Stock-keeper. First class man to take charge of stock book and stock room in carriage factory building 10,000 vehicles per year. Best references required. Address F. A. AMES & CO., Owensboro, Ky.

Carriage mechanics, blacksmiths, painters, trimmers, ware-room craters and wood workers wanted. Cincinnati, the carriage manufacturing center of the United States, needs more carriage workers for its increasing trade. Twenty-nine shops built 150,000 vehicles this year. Steady employment. Good wages; good schools; rents and living cheap. Address with reference, U. S. VEHICLE MANUFACTURERS' ASSOCIATION, Box 103, Station F, Cincinnati, O.

Wanted—Hustlers to secure new subscribers for THE HUB. A good chance to make money easily. Subscription price, $2.00 a year. Liberal commission paid. Address Subscription Department, THE HUB, 24-26 Murray street, New York.

M. Z. Patrick, industrial agent Seaboard Air Line Railway, at Pinebluff, N. C., the well known winter health resort, offers building and power free to parties wishing to start manufacturing in a small way with view of enlarging. No doubt many will accept this generous offer.

PATENTS.

PATENTS.—H. W. T. Jenner, patent attorney and mechanical expert, 607 F street, Washington, D. C. Established 1883. I make an examination free of charge, and report if a patent can be had and exactly how much it will cost. Send for circular.

FOR SALE.

Solid rubber tire patent. Entirely new principle. Cannot get off the rim. Economical. Experienced tire men say it is the best they have ever seen. For particulars address "RUBBER TIRE," care of THE HUB.

FOREIGN AUTOMOBILE AGENCY WANTED.

To Motor Car Builders:—A British house, established 25 years in London, desires to take up an agency for light motor carriages of the locomobile type. First class premises with good factory near to three largest railway depots. Holders of leading patent on solid rubber tire well tested on automobiles, and a new axle already in use. Being experienced in body work and wheels, could effect any repairs, or make up light bodies. Could also fix wheels and tires, and manufacture working parts if necessary. An opportunity for any firm to establish a business in England. Please write to THE HUB for our name and address.

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COLOR SECRETS.

No. 45.—The Delight of the Eye.

This is a busy world. We have no time to investigate the thousand facts which make up the sum of value. We must judge the hidden by what appears on the surface. There are signs of things that we instantly recognize, and which a wide experience has taught us do nearly always indicate the real worth. We size up a man by his manners, and quickly decide whether we want any further dealings with him. We judge a horse by his style and spirit, by the way he holds his head and lifts his feet. The look of the linen, on table and waiter, quickly determines us to lunch in that restaurant or go elsewhere. "For Sale" hangs on, month and year, because the trees are ragged and the lawn unclipped.

The speedy sale of furniture, carriages, pianos, and the like, nine times in ten, is a matter of attraction to the eye. Love at first sight may be a romantic theory as it concerns people; but it is a very practical theory in the salesroom. The entire value of the thing appeals or repels in the character of the finish. The finish depends on the color. The finest varnish and the most careful workmanship cannot overcome the disadvantage of bad color.

And then, there is an aftermath—a second crop of pleasure or worry: for the bad color, which retards the sale, will spoil the wear. Varnish cannot last on a rough surface. The perfectly smooth color, which is ivory to the eye and velvet to the touch, gives perfect foundation for the varnish. Fine color is cash and happiness, both to the seller and buyer.

MURPHY VARNISH CO.

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Wheels Galore

We can now take care of you all at a minute's notice as we have recently built a large new factory at Flint, Michigan, which increases our capacity to 1200 sets per day.



FLINT FACTORY.

THE FAMOUS

"Whalebone Brand" Wheels

HAVE NO PEER

TWO OF LARGEST AND BEST EQUIPPED FACTORIES IN THE WORLD

Our "Jackson Factory" is located at

Jackson, Mich.,

and is second to none.

We can also supply you with wheels equipped with high grade rubber tires at a very low figure, and would be pleased to name you prices on application.

IMPERIAL WHEEL CO.

General Office, FLINT, MICH.

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HENRY A. SCHAEFER

1883—1901

HENRY KLEIN

Coach Lace, Carriage

Schaefer & Klein

SUCCESSORS TO

HENRY A. SCHAEFER

and Hearse Trimmings

ROCHESTER

NEW YORK

Represented by

W. HETHERINGTON

H. W. WERMER

H. R. BOYES

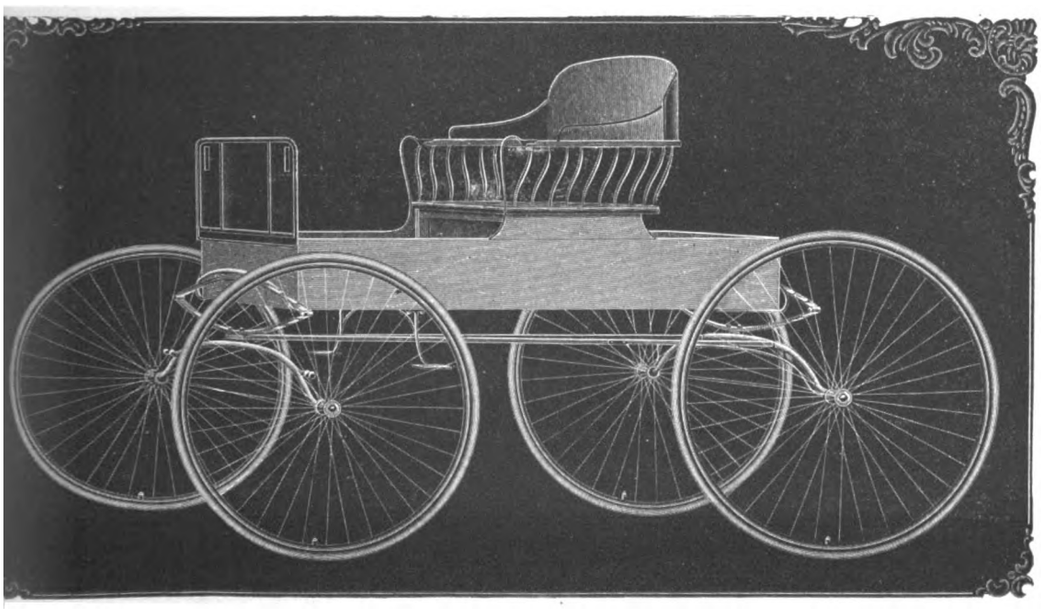
B. B. LYNCH

J. P. POLLOCK

Canopy Fringes, Etc.

THE FRANTZ "AKRON."

BODIES. BIKES IN THE WHITE. GEARS.



We Sell them Cheaper than you can Make them. . . . . . .

We Name a Surprising Low Figure on this Bike. . . . . . .

ORDER SAMPLE.

No Better Value for the Money on the Market.

THE FRANTZ BODY MFG. CO., AKRON, OHIO.

Please mention "The Hub" when you write.

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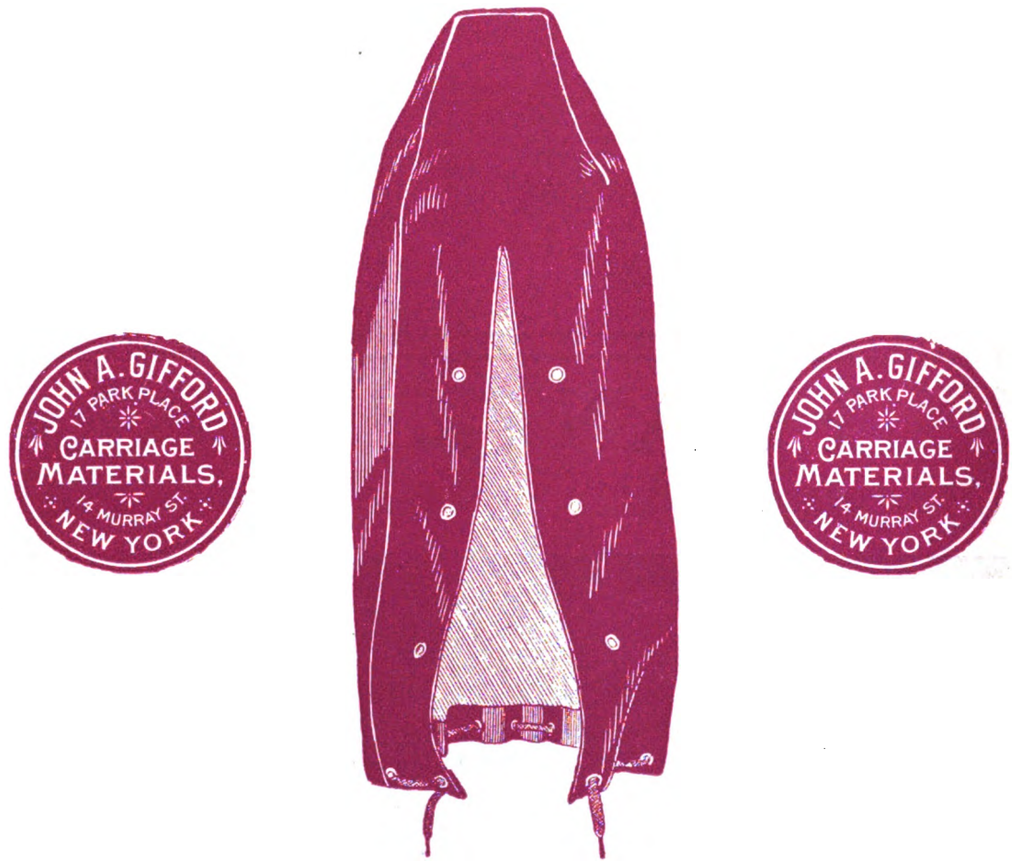
JOHN A. GIFFORD,

17 Park Place, New York.

Manufacturer, Importer and Exporter of Everything in the Line of

Carriage, Wagon, Truck and Automobile Materials.

The Tompkins Adjustable Cover for Carriage and Wagon Lamps



COVER OPEN.

Sizes and shapes to fit any size or style of Lamps. Made in ONE PIECE of heavy Rubber Drill, with four-ply Seamless Head. No Leaky Seams. Absolutely Waterproof. No Head to tear out. All seams sewed and Vulcanized. No Buttons or Hooks to break off. No Patent Fasteners to draw out. Readily applied and easily laced with one drawstring. Great protection from Dust and Ammonia Fumes of stable, from Water while washing carriage, from Mud, Rain, and Snow in stormy weather. Great Labor Saver, as it keeps the plating bright, and lustre on japan.

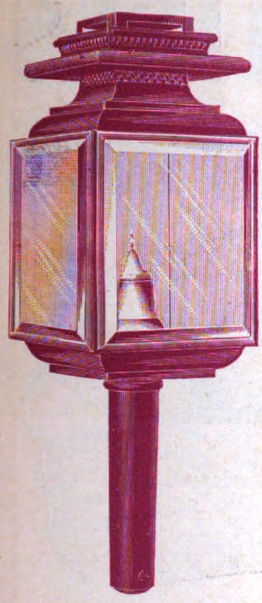
DIRECTIONS FOR MEASURING FOR COVERS:

Take circumference at the largest or widest part of the Lamp, also give extreme length of Lamp over all.

CARRIAGE LAMPS A SPECIALTY.

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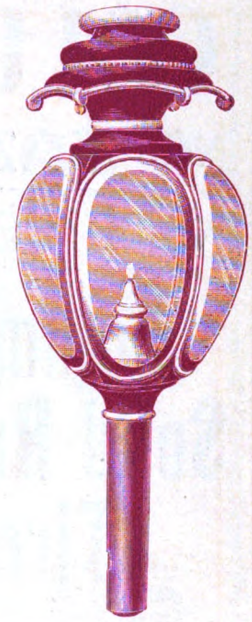
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C. COWLES & CO.,

NEW HAVEN, CONN., U. S. A.

Manufacturers of CARRIAGE HARDWARE AND TRIMMINGS



GLASS FRAME PLATES.

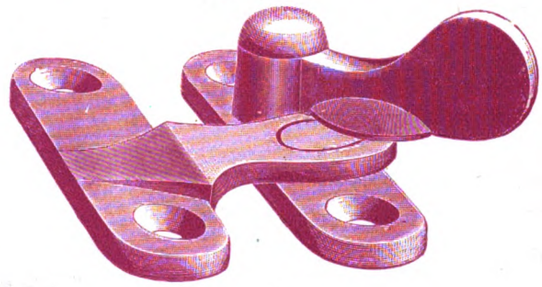


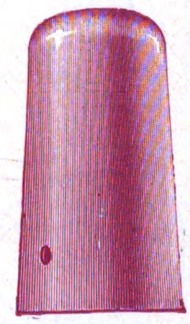
SILVER MOLDINGS.



Largest Manufacturers of Carriage Lamps.

"NEW HAVEN" TAIL BOARD FASTENER.
Cut ¾ size.



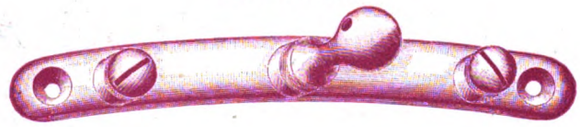


Send for Sample.

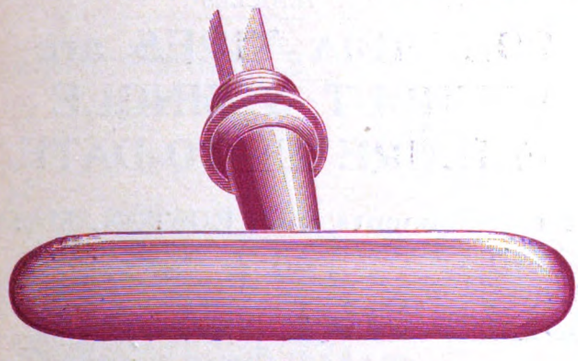


"Excelsior" Window Anti-Rattler.

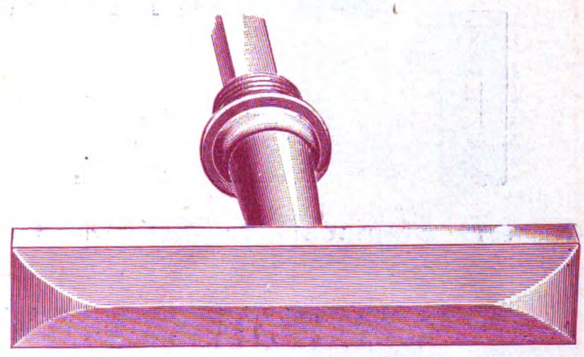
TUG STOPS.



CARRIAGE DOOR HANDLES.—Latest Patterns.



No. 51.



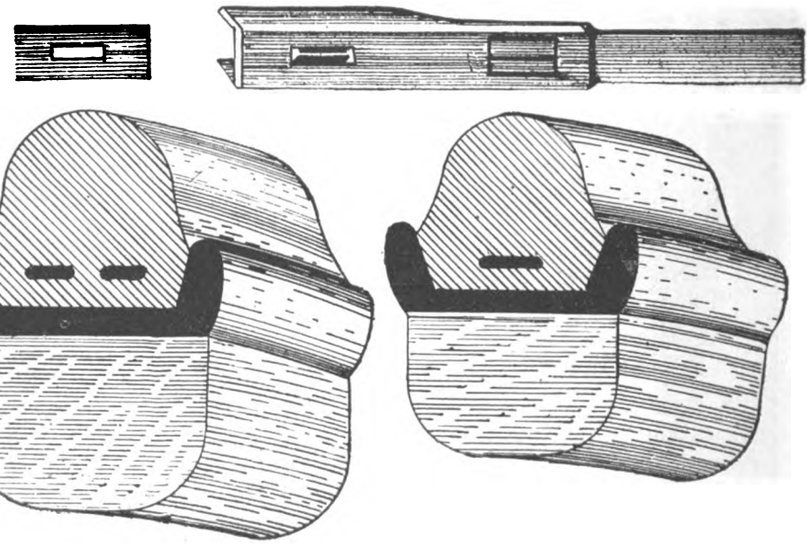
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N. B.—CATALOGUES SENT ON APPLICATION.

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COLUMBIA VEHICLE TIRES

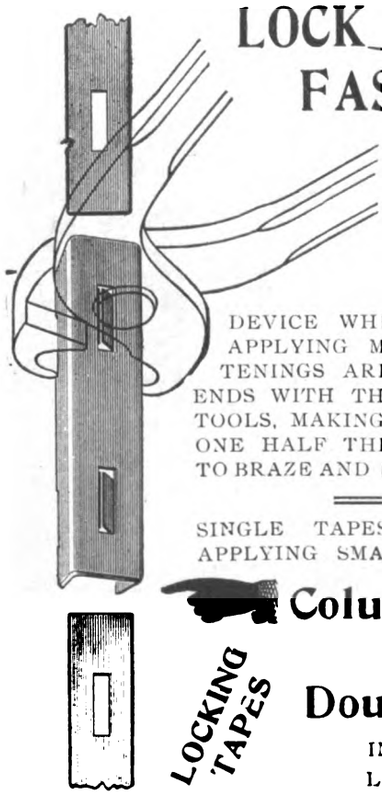
NO BRAZING
NO RIVETING



Columbia Solid Rubber Tires

ARE APPLIED WITH LOW-PRICED MECHANICAL

EQUIPMENT in ONE HALF the time required for Applying any other Solid Tire on the Market. Tapes and LOCK FASTENINGS are GALVANIZED and Proof against the Rusting and Wasting of Wires and Tapes which result in loose tires and destroy them before they are half worn out.



LOCK FASTENINGS

ARE SENT APPLYERS READY TO USE. THE ENDS OF TAPES ARE SQUARED AND PUNCHED WITH SIMPLE HAND DEVICE WHILE WHEEL IS IN APPLYING MACHINE AND FASTENINGS ARE LOCKED TO TAPE ENDS WITH THREE SMALL HAND TOOLS, MAKING SMOOTH JOINT IN ONE HALF THE TIME REQUIRED TO BRAZE AND **DOUBLY AS STRONG.**

SINGLE TAPES ARE USED IN APPLYING SMALL SIZES OF

Columbia Tires

....AND....

Double Tapes

IN APPLYING LARGE SIZES.

LOCKING TAPES

TWO WIRE RUBBER

OUR EQUIPMENT APPLYS THE TWO-WIRE RUBBER EQUALLY AS WELL AS COLUMBIA TIRES WHICH WE ALSO SUPPLY TO OUR LICENSEES OF

THE BEST GRADE AKRON RUBBER

WE GUARANTEE

THAT ANY MECHANIC HAVING SEEN ONE TIRE APPLIED WITH COLUMBIA EQUIPMENT CAN APPLY OTHERS ACCURATELY AT ONCE.

AFTER LONG SERVICE TESTS ON ALL STYLES OF VEHICLES

COLUMBIA TIRES are WITHOUT a SINGLE FAILURE UP-TO-DATE.

Western Shipments from AKRON, O. Eastern Shipments from BOSTON, MASS.

COLUMBIA VEHICLE TIRE CO.,

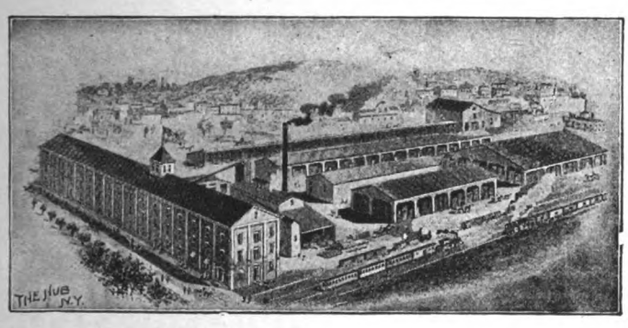
General Offices: 97 Haverhill Street, - BOSTON, MASS.

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G. W. SEBOLD, *President* J. H. BEACHLEY, *Vice-President* F. S. BARRICK, *Secretary*
S. A. MUNN, *Treasurer* A. S. HARING, *Superintendent*

THE HAGERSTOWN SPOKE AND BENDING CO.

MANUFACTURERS OF



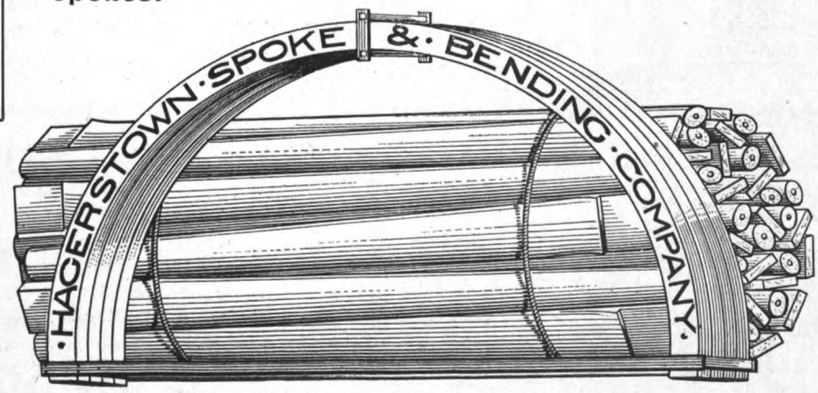
Spokes and Rims

EXPORTERS OF

Hardwood, Oak, Hickory and Walnut, Logs and Lumber.

TRADE MARK

The celebrated "HORSESHOE" brand of which we export largely. All foreign and American patterns of Spokes.



CORRESPONDENCE SOLICITED.

A. B. C. Code Used.

Cable Address: "SEBOLD."

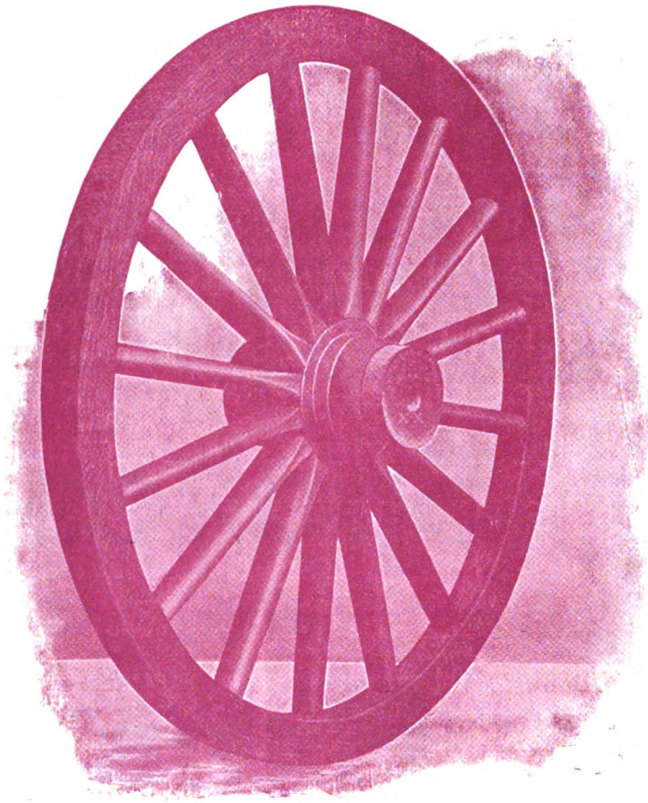
Hagerstown, Maryland, U. S. A.

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HOOPES BRO. & DARLINGTON

WESTCHESTER, PA., U. S. A.



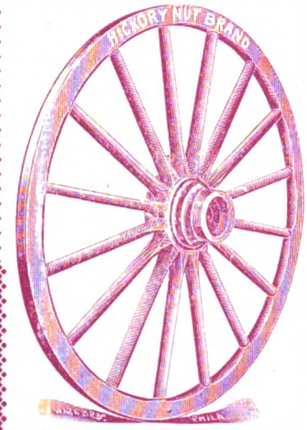
Makers of...

WHEELS

For

Carriages, Automobiles, Business Wagons and Trucks.

Warner, Sarven, Kenney, Sweet, Wood Hubs.



CRANE & MacMAHON,

No. 18 South Street, New York.

FACTORIES:
VIRGINIA and NORTH CAROLINA WHEEL CO., ST. MARY'S SPOKE WORKS, and WAPAKONETA BENDING CO.

WHEELS SARVEN. WARNER,

and WOOD HUBS, Heavy and Light. Heavy Wheels for Business Wagons a Specialty.

MANUFACTURERS OF ★ BRANDS OF
CARRIAGE AND WAGON WOOD STOCK
RIMS, SPOKES, HUBS, ETC.,
AND HARDWOOD LUMBER.
SEND FOR CATALOGUE AND PRICE LIST.

The Hickory Nut Brand is made of Second Growth Hickory Rims, Spokes and Elm Hubs.
The Acorn Brand is made of Second Growth Oak Spokes, Bent Oak Rims or Sawn Felloes. Thoroughly Seasoned Stock.

FINE CARRIAGE WHEELS.

E. FLICKINGER,
President and Manager.

Capacity 500 Sets per day.

OUR TIRE PLANT ENABLES CARRIAGE AND WAGON MANUFACTURERS TO HAVE THEIR WHEELS TIRED BY EXPERIENCED WORKMEN. CAPACITY OF TIRE DEPARTMENT, 250 SETS PER DAY. CORRESPONDENCE SOLICITED.

THE FLICKINGER WHEEL CO.,
MANUFACTURERS,
GALION, OHIO.

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ESTABLISHED. 1890.

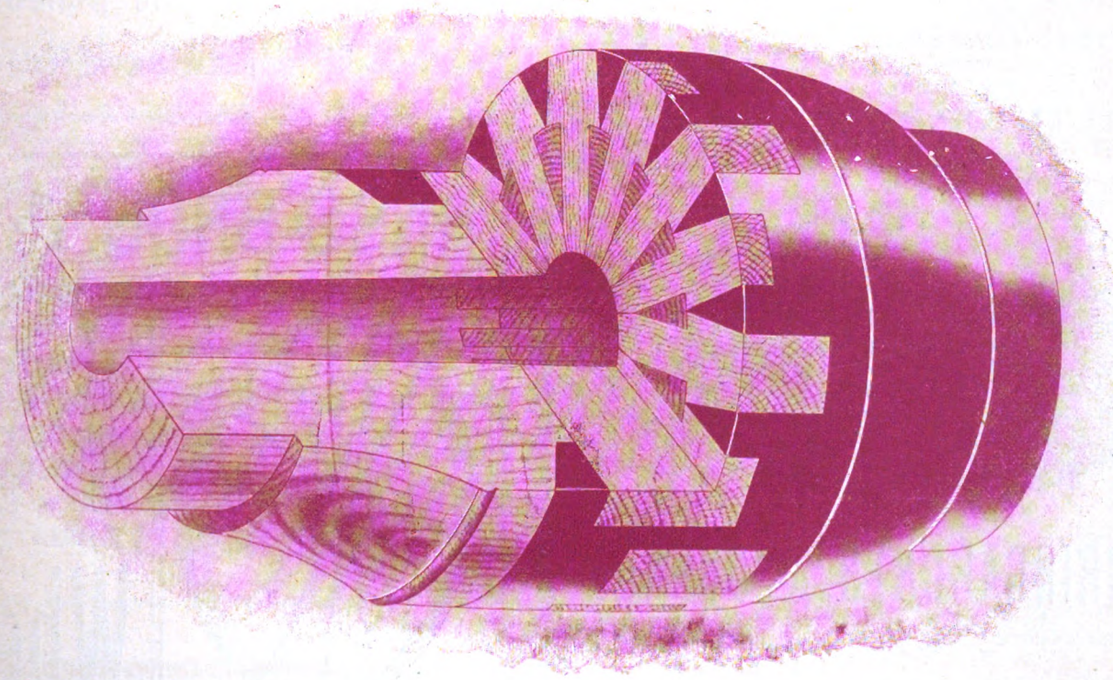
OUR SPECI-ALITIES.

OUR WHEELS ARE THE BEST.

WE HAVE ONE OF THE MOST COMPLETE PLANTS FOR PUTTING ON STEEL TIRES IN THE UNITED STATES. WE ALSO APPLY SOLID RUBBER AND PNEUMATIC TIRES.



WE SELL WHEELS COMPLETE. WE USE THE KELLY-SPRINGFIELD SOLID RUBBER. NO EXTRA CHARGE FOR WOODBURN FLANGE.



OUR LEADER IS THE SCHAD HUB

IT IS THE HANDSOMEST AND STRONGEST HUB ON THE MARKET.

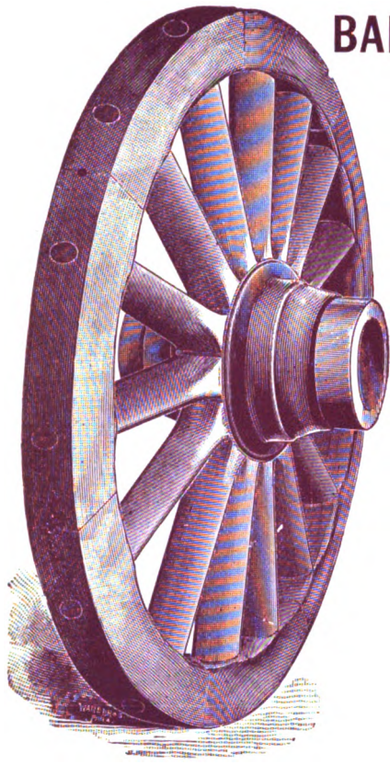
THE SPOKES CANNOT GET LOOSE IN THE HUB.

AVOCA WHEEL CO.

AVOCA, N.Y. U.S.A.

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Edward Stinson & Co.



BALTIMORE WHEEL FACTORY,

MANUFACTURERS OF

Warner,
Sarven,
Plain,
Compressed
Band and
Sweet's Hub

WHEELS

ALL SIZES.

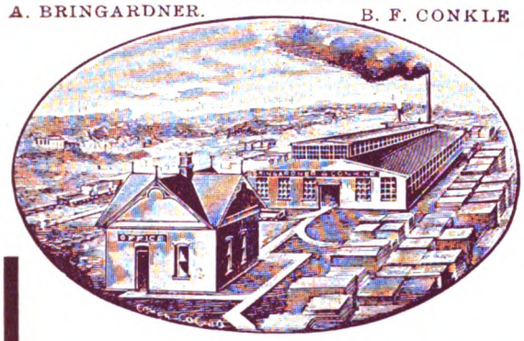
With or Without Steel, Iron or Rubber Tires.

OUR MAKE WARNER WHEEL

327-335 North Street,
BALTIMORE, MD.

ESTABLISHED 1879

A. BRINGARDNER. B. F. CONKLE



PROMPT DELIVERY

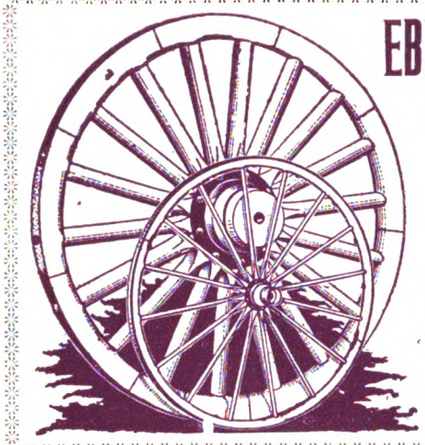
BRINGARDNER & CONKLE

Manufacturers of

Carriage Woodwork,
Elliptic, Side Bar,
Phaeton and
Carriage Gearing

Office and Factory at - - JUNCTION CITY, OHIO

GREATER CAPACITY THAN ANY OTHER CONCERN OF THE KIND IN THE WORLD



EBERLY & ORRIS

MECHANICSBURG, PA.

Manufacturers of ...

Light and Heavy

WHEELS

Wheel Stock and Hard Wood Lumber

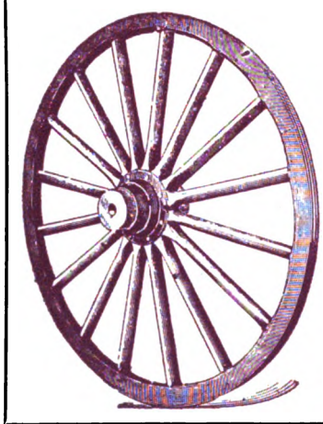
WHEELS

WHEEL MATERIAL AND BENT WOOD WORK

The Wheel & Wood Bending Co.,

Send for Catalogue. BRIDGEPORT, CONN.

NESS BROS. & CO.



MANUFACTURERS OF

SARVEN,
WARNER,
WOOD HUB,
BANDED HUB,
STAR or KENNEY,
SHELL BAND,

Wheels

CAPACITY: 100 SETS PER DAY.
ALL SIZES, WITH OR WITHOUT
STEEL, IRON OR RUBBER TIRES.

WHEEL STOCK.

Broad and Philadelphia Streets,
YORK, PA.

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PIONEER BRAND CARRIAGE TOP HARDWARE.

"IMITATION IS SINCEREST FLATTERY."

The "genuine," however, has all the attributes of the "imitation" but none of the latter's disadvantages,—such as short counts, "job lots" of raw materials, inferior finish, seconds and thirds indiscriminately packed with firsts to "work them off."

The adoption and continued use by the largest manufacturers of the line of "genuine" goods made under our **"PIONEER BRAND"** speaks eloquently for the economy of use found in them.

They not only "are just as good," "answer the purpose," "do the work," but also "their prices count" and "their dependable quality makes them most satisfactory and economical in the long run."

MEASURE COSTS BY RESULTS,—NOT ALWAYS BY FIGURES.

BOW SOCKETS.
All styles in both japanned and leather covered.

TOP BRACES
The RIGHT kind; improved double head rivet originated by us, imitated by every other manufacturer.

SHIFTING RAILS.
Electric welded; all varieties of style and detail.

BUCKLE LOOPS.
Seventeen styles and sizes in japanned and leather.

CURTAIN LIGHTS
Oval, oblong, square, round. Plain glass or bevel.

PROP NUTS.
Japanned and nickel; plain and imitation stitched; capped and solid head.

CURTAIN STRAPS.
Three styles, all good.

TOP PROPS.
Solid or screw bases. Properly threaded to fit nuts.

WAGON CURTAIN PATCHES.
Best selected leather used. Nothing else satisfactory.

KNOBS.
Styles and sizes too numerous to mention—cast and wrought.

CURTAIN FASTENERS
I. X. L., SNAP, and others; these two the best.

SHAFT TIPS.
Japanned, X. C., nickel, steel and brass; very durable; made from heavy stock.

TUFTING BUTTONS.
Japanned, cloth covered, leather covered, composition, eye and clinch—tacks and nails galore.

LINING NAILS.
Capped and solid head. Packages or bulk. Japanned or bright.

MANY OTHER ARTICLES.
Our catologue tells of them. Keep it at hand for consultation.

MAKERS:

Crandal, Stone & Co., Binghamton, N. Y.

"FOURTEEN YEARS AHEAD"

OUR SPECIALTY IS

SPRING BRAKE BLOCKS AND BRAKE ATTACHMENTS

FOR USE ON... CARRIAGES, WAGONS and TRUCKS

MEET US AT
Dealer's Convention
OCTOBER 15 - 20

Many styles and sizes to meet every requirement. We have proved that for EFFICIENCY, DURABILITY AND ECONOMY that our goods are a long way ahead of the ordinary kind. In 1887 a few sets of these Spring Brake Blocks were attached to business wagons having the most severe and constant use and now after daily use for FOURTEEN YEARS these are giving entire satisfaction.

MORGAN POTTER,
FISHKILL-ON-HUDSON
N. Y., U. S. A.

WORTH GOING TO.

120,000 square feet required for the display of finished vehicles, and accessories, harness and agricultural implements.

Over 400 different concerns.

Remember the time and place:
Cincinnati, Ohio, November 18–23, 1901.

J. H. STEPHAN & SON,

MANUFACTURERS OF

Hubs and Spokes

HIGH GRADE STOCK A SPECIALTY.

HAMILTON, OHIO.

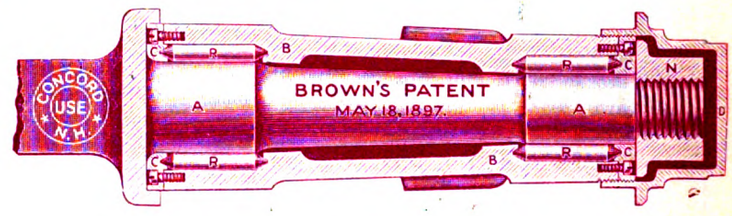
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- D. ARTHUR BROWN -
- TREAS., -

CONCORD

Brown's Pat. Roller Bearing Axle.



MANUFACTURED

CONCORD AXLE CO

Please mention "The Hub" when you write.

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CONCORD USE N.H.

TRADE MARK

AXLE CO.

Concord Express Axle, with Coach Bed. No. 6.



ONLY BY

PENACOOK, N.H.

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THE BOOKWALTER WHEEL

Ohio Second Growth Wheels a specialty

For Rubber Tire the Curtis Wheel is the best made

COMPANY

MIAMISBURG, O.

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EVERY SET GUARANTEED AS REPRESENTED.

Automobile Wheels

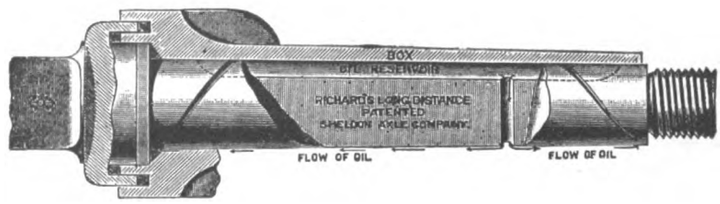
ARCHIBALD WHEELS,
SARVEN WHEELS,
WARNER WHEELS,
CARRIAGE WHEELS.

Our wheels are better made and finer finished than any others sold to the trade.

New Haven Carriage Co.,

NEW HAVEN, CONN.

SHELDON AXLE CO.



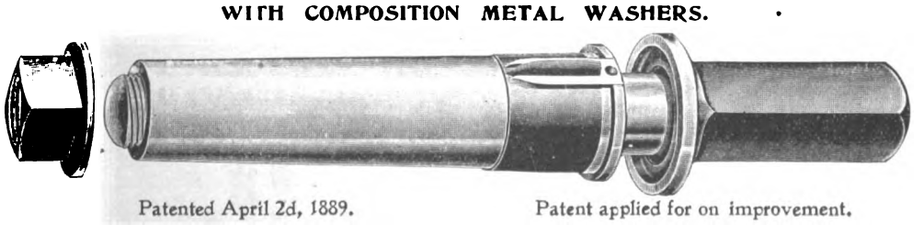
They are now prepared to furnish BIKE WAGON AXLES in any quantity, promptly, ready for welding to fifth wheels and centres. ... The RICHARDS "LONG DISTANCE" (the only long distance axle made) still leads. There are many cheap imitations on the market, but only one real thing.....

SHELDON AXLE CO., Wilkes-Barre, Pa.

Not only CLAIM to make the best Axles and Springs made in the world, in each of their grades, but DO SO.

Collinge Collar Express Axles

WITH COMPOSITION METAL WASHERS.



Patented April 2d, 1889. Patent applied for on improvement.

Designed for Express Wagons, Milk, Laundry, Delivery Work, Fire Chief, Ambulance, Apparatus, and all classes of work requiring extra strong, protected and durable Axles.

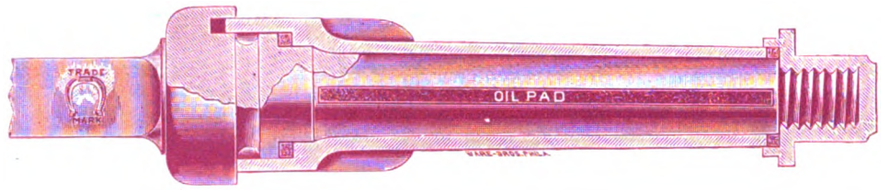
All kinds Axles and Springs Tired Wheels Etc., Etc.

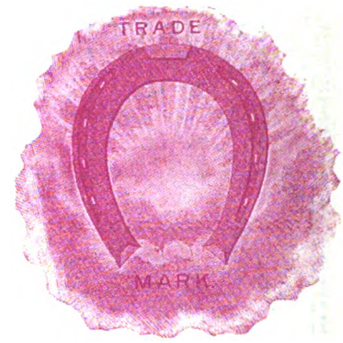
W. F. BLACK,
401 Electric Building,
CLEVELAND, OHIO.

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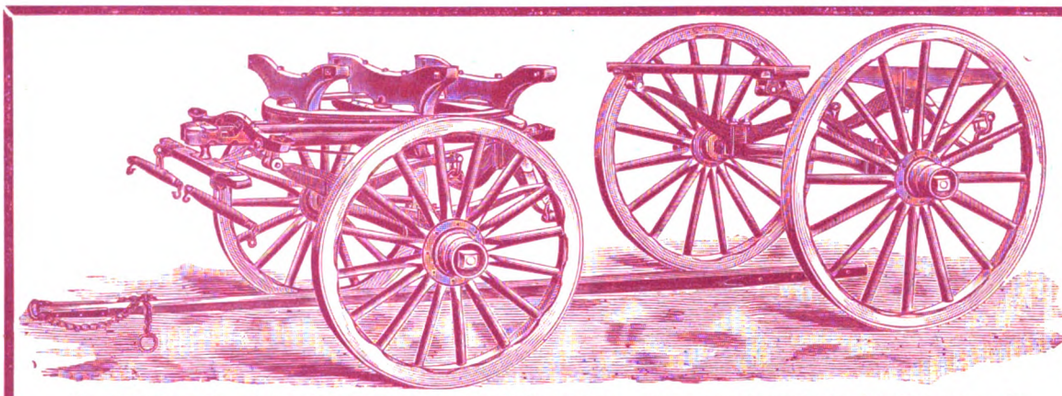
Manufacturers of **"Collinge Collar"** and other styles of Axles for "Long Distance" use.

Also Manufacturers of the best **"Concord Express Axles."**





SPEARS AXLE CO., WHEELING, W. VA., U. S. A.



Complete Gears as shown above, ready to receive body, for light and heavy work, can be furnished promptly. In ordering give full specifications, or such description as will enable us to make up specifications. Dealers in wagon materials will quote prices on our gears.

SELLE GEARS

THE SELLE GEAR CO.

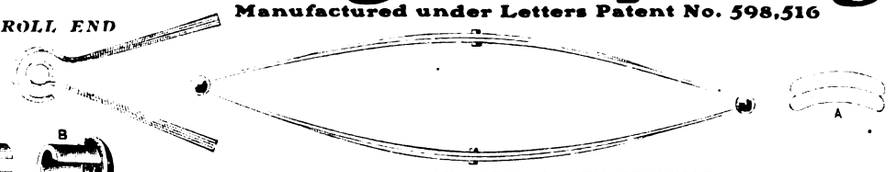
AKRON, O.

The **PREMIER**

Bike Wagon Spring

Manufactured under Letters Patent No. 598,516

SCROLL END



Malleable Iron Bushings used Between the Upper and Lower Scroll at Ends.

AN ENTIRELY NEW PRINCIPLE

The Combination of Taper and Graduated thickness of leaves to produce an elasticity that is unexcelled. The latest in Springs. Fully Guaranteed. Made in Six sizes.

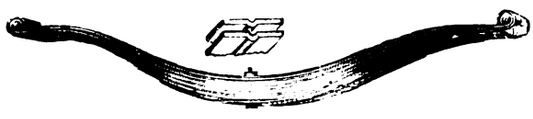
THOUSANDS IN USE

Write for full description and Price List. Address

***The* HESS SPRING & AXLE Co.**

CARTHAGE, O.

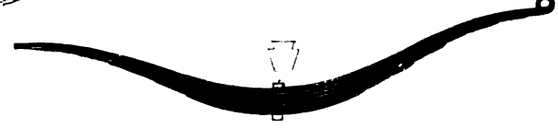
KEYSTONE SPRING WORKS.



We are the original PATENTEES and MANUFACTURERS of the

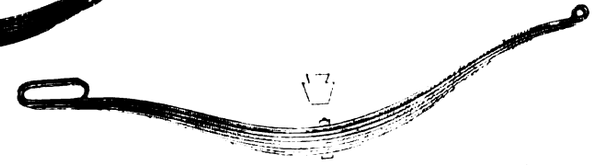
PATENT RIB TRUCK and PLATFORM SPRINGS.

Send for our Poster showing all our styles, etc.



OUR SPECIALTY IS:

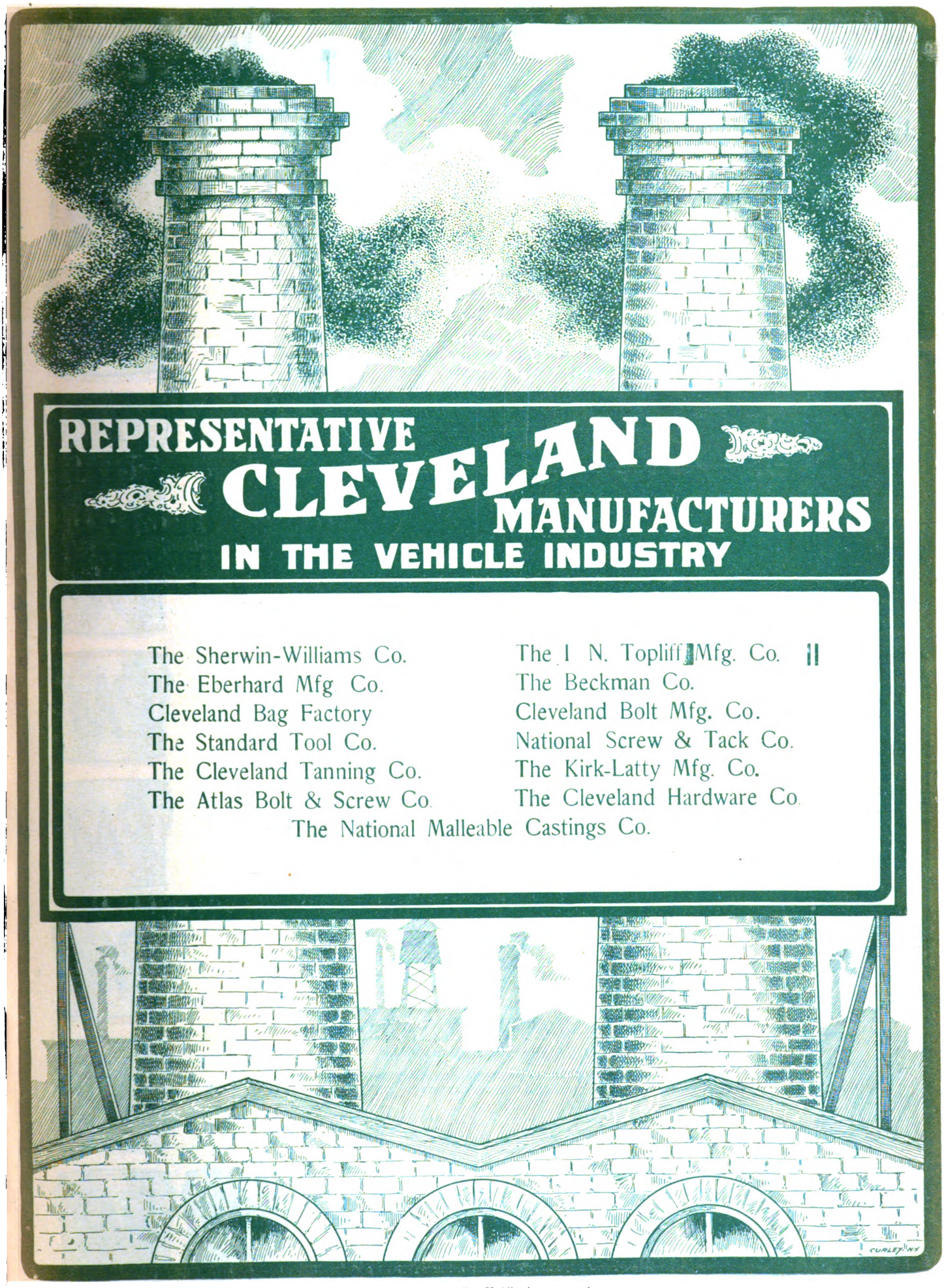
Heavy Wagon and ...Truck Springs.



13TH & BUTTONWOOD STREETS,

PHILADELPHIA, PA.

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THE SHERWIN-WILLIAMS PERFECT METHOD OF CARRIAGE PAINTING.

YOU can improve your paint shop facilities in five important points by adopting Perfect Method. You can get:

Greater Speed,
Greater Durability,
Greater Economy,
Greater Beauty,
Greater Uniformity.

We're ready to prove these points to you by practical tests in your own shop. Will you give us the opportunity?

We can positively demonstrate the superiority of Perfect Method over shop-made lead and oil and every other system.

To install Perfect Method means no expense and no trouble. It's not like throwing out old machinery and putting in new.

One of the first things Perfect Method does for you is to cut down expense and save you trouble. From the morning you make the change you begin to get improved results.

You take no chances of failure in adopting Perfect Method. Its experimental stage was ended long before we put the goods on the market.

Perhaps you know that after we had perfected the system in our factory we sent a number of practical men out among the builders to make tests.

They were out a year, before we finally placed the goods on the market.

In 1898 we began selling, and since that time over fifty per cent. of all light spring vehicles manufactured in the United States and Canada have been painted with Perfect Method. And that doesn't cover all it's uses by any means.

Such success means that the system is right.

You'll find a brief resume of what we claim for Perfect Method on the next page. We want to prove these claims in your own shop. Let us hear from you.

THE SHERWIN-WILLIAMS CO.
PAINT AND VARNISH MAKERS
CLEVELAND, CHICAGO, NEW YORK, NEWARK, MONTREAL, BOSTON, TORONTO, SAN FRANCISCO, KANSAS CITY, LOS ANGELES.

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THE SHERWIN-WILLIAMS PERFECT METHOD OF CARRIAGE PAINTING.

IN any shop, large or small; on all grades of work, the best or the cheapest; for new work or repairing, Perfect Method can be used to better advantage than any other system of undercoatings.

Briefly stated, Perfect Method gives:

GREATER SPEED because it requires fewer operations; because it dries uniformly in the shortest possible time, cutting down the number of days necessary for doing the work. Perfect Method makes it possible to rush painting and still give a thoroughly durable job.

GREATER BEAUTY because it is ground finer and mixed better than any other material; because it's free from most of the causes for poor and careless workmanship; because it produces clean, smooth, brilliant surfaces. Perfect Method reduces carriage painting to an exact science.

GREATER DURABILITY because it's made from absolutely pure materials; because every coat is elastic from primer to finish and thoroughly suited to any other coat which it is to come in contact with. Perfect Method can't go wrong when correctly used.

GREATER UNIFORMITY because each coat is absolutely uniform —never varies, primer is always the same, surfacer always the same, filler always the same, because the materials are always the best and always pure. Perfect Method is made by machinery according to absolute formulæ—no guess work.

GREATER ECONOMY because it saves time and labor and cuts down the allowances for repainting. Perfect Method prevents complaints. It's a talking point that wins trade.

The PM Booklet tells more of the story, personal interview tells still more. Write us for either.

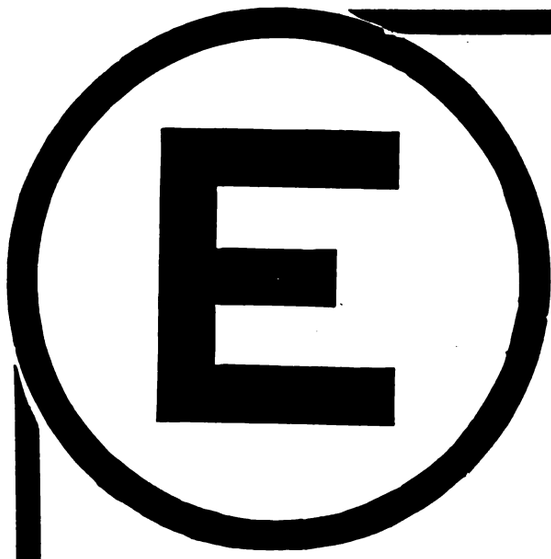
THE SHERWIN-WILLIAMS CO.

PAINT AND VARNISH MAKERS.

CLEVELAND, CHICAGO, NEW YORK, NEWARK, MONTREAL, BOSTON, TORONTO, SAN FRANCISCO, KANSAS CITY, LOS ANGELES.



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MALL

WHAT WE KNOW

The immense line of irons bearing this brand is known in every carriage shop in the land.

It has grown with the growth of the carriage trade.

The character and nature of our product fully meet all requirements of the trade as no other material ever can.

WHAT THE BUILDER KNOWS

The builder of to-day knows that the irons are designed, made and IN STOCK, for any vehicle he may wish to build.

Designs, measurements, special features are all anticipated and provided for.

And he knows right where to find them.

THE EBERHARD MFG. CO.,

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EABLE IRON

WHAT WE CANNOT DO

We cannot show them here. It takes six hundred pages of cuts to do that.

And that does not include what we have up our sleeve.

Anyhow the builder needs not to ask if we make it.

WHAT WE CAN DO

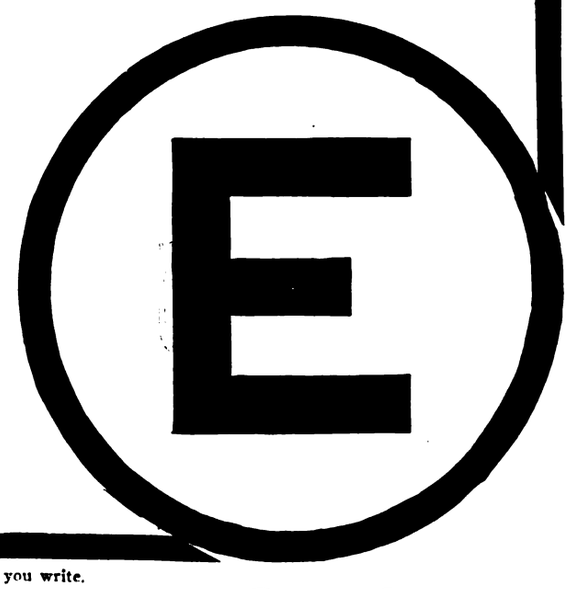
He only needs to say when he wants it, and where he will have it sent.

And in a few days his man knocks in the head of a barrel and takes it out.

THE FINISH

The EC is still in the ring.

CLEVELAND OHIO



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THERE ARE BENEFITS TO BE DERIVED IN BUYING FROM DIRECT IMPORTERS AND MANUFACTURERS.

WE CARRY A LARGE STOCK, WHICH ENABLES US TO FILL ORDERS PROMPTLY.

WILL YOU SHARE IN THESE BENEFITS?

OUR SAMPLES AND PRICES FOR THE ASKING.

Cleveland Bag Factory,

Manufacturers and Importers.

Buckram,

SINGLE AND DOUBLE, ROUGH AND LEATHER FINISH.

Burlaps,

BY THE CARLOAD, BALE OR PIECE, ALL WIDTHS AND WEIGHTS.

Paddings,

BLACK AND NATURAL, SOFT AND STIFFENED.

Signs,

FOR ADVERTISERS, ON WEATHER-PROOF FIBRE, MUSLIN AND CARDBOARD.

Cotton Sheeting, Osnaburg, Duck, Canvas and Webbing.

Cleveland Bag Factory,

CLEVELAND, OHIO.

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Every STANDARD Tool
Bears this Trade Mark

BUY "Standard" TOOLS
BECAUSE THEY ARE EXACT!
HIGHEST QUALITY ONLY

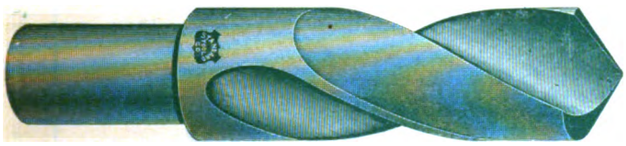
Every STANDARD Tool
Bears this Trade Mark

TAPER SHANK OIL TUBE DRILLS



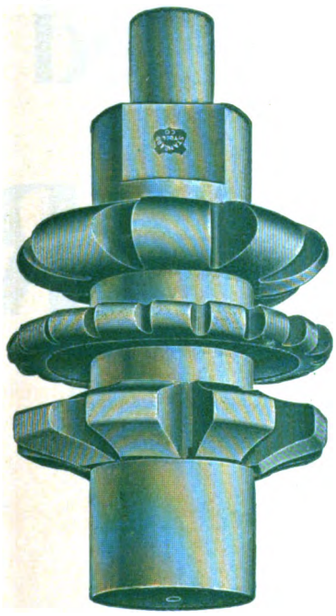
No. 112 A

SPECIAL TOOLS FOR TURRET MACHINES

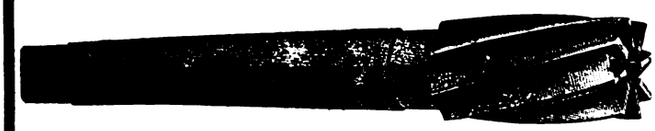


No. 310

Gang Cutters Made To Order

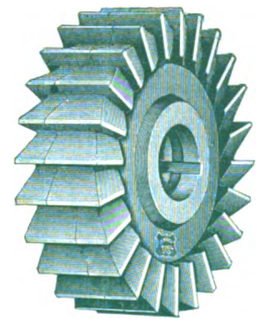


SPIRAL END MILLS



No. 138

INTERLOCKING HEADING MILLS



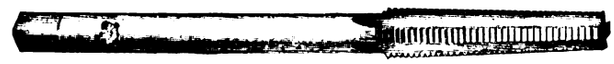
No. 140

INCREASE TWIST DRILLS
With Taper Shanks



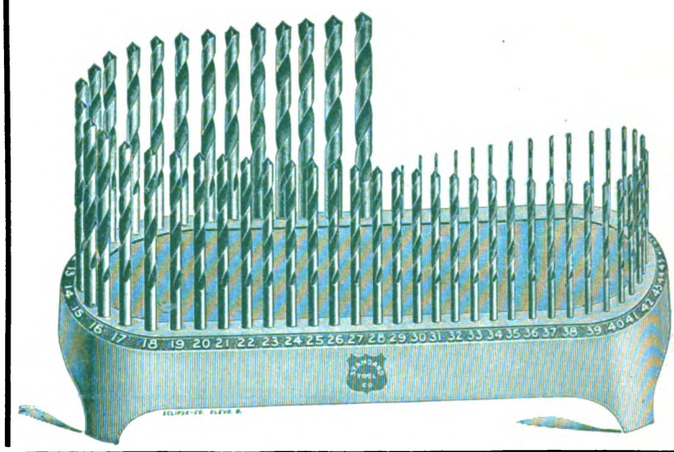
No. 104

MACHINE OR NUT TAPS



No. 131 A

Metal Block Furnished with Set of Twist Drills No 8



THE STANDARD TOOL COMPANY

CLEVELAND
1260-1288 Central Avenue

NEW YORK
94 Reade Street

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The
Cleveland Tanning Co.

Hand Buffed Leather

Machine Buffed Leather

Deep Buffed Leather and Splits for Tops, Trimmings and Dashes

Tanners and Manufacturers of

Patent and Enameled

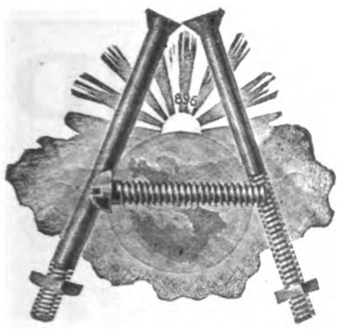
LEATHER

For the Carriage Trade

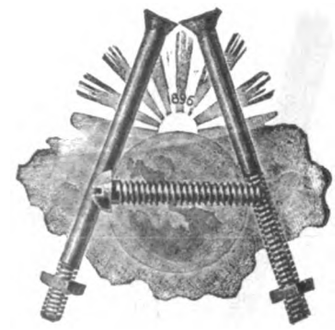
Office and Tannery.....

BELT LINE ST.,
Jennings & Dennison Aves.

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THE ATLAS



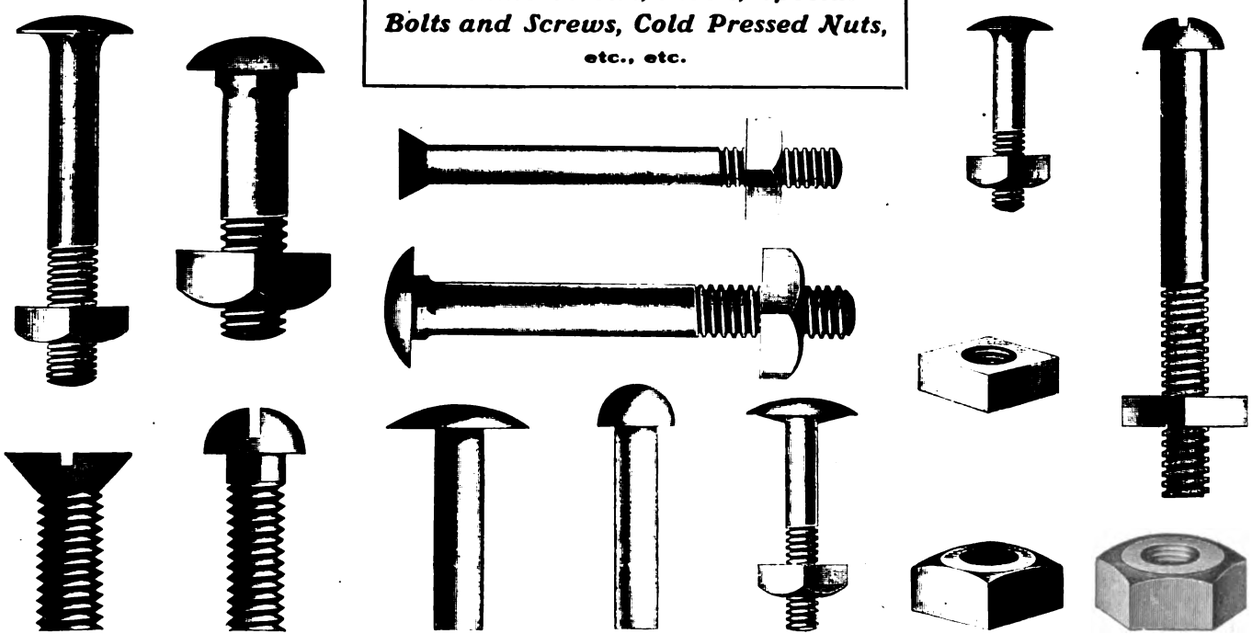
BOLT AND SCREW CO.

CLEVELAND, OHIO.

Manufacturers of

Stove Bolts, Tire Bolts, Carriage Bolts, Machine Screws, Rivets, Special Bolts and Screws, Cold Pressed Nuts,

etc., etc.



IF you want perfection in material and workmanship, together with low prices and prompt shipments, send us your orders.

By sending us a sample order for trial you will be convinced.

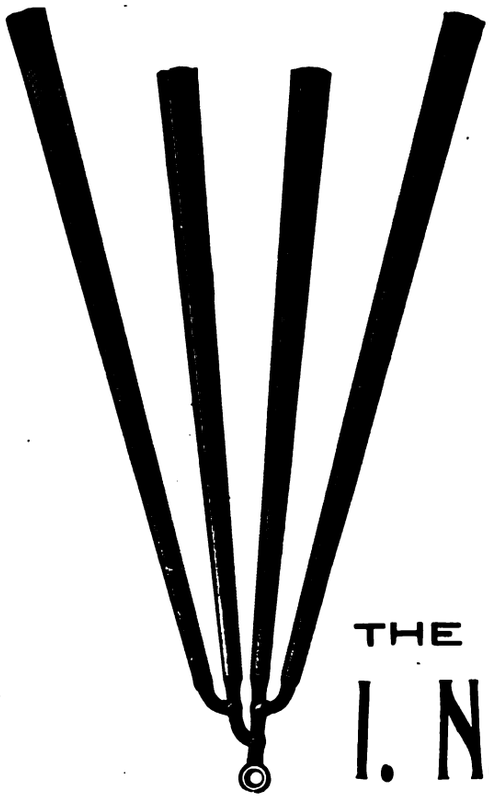
We solicit orders for small, special cold-pressed work in our line and should like to have your inquiries, sending samples.

All inquiries will have our cheerful and immediate attention and we shall be glad to send our latest catalog to any one desiring it.

DON'T FORGET US.

Please mention "The Hub" when you write.

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CLEVELAND

.. BOW ..

SOCKETS

LEATHER & STEEL

Are ... ... satisfactory

***The* Price is right ...**

THE

I. N. TOPLIFF M'F'G CO.

CLEVELAND, OHIO

Our Way

Others' Way

SHORT - CUT

RETAIL DEALER MILL 1 PROFIT. PAYS ONLY ONE PROFIT.

MILL TO RETAIL

RETAIL DEALER JOBBERS. EASTERN COMMISSION HOUSES MILL 1 PROFIT. 2ND PROFIT. 3RD PROFIT. PAYS 3 PROFITS.

Wool Square Horse Blankets

FROM MILL DIRECT TO RETAILER.



Wool Carriage Robes

Profitable Line

"Easy to sell as Nails."

NORTHERN OHIO BLANKET MILLS

THE BECKMAN CO.

CLEVELAND, OHIO

SELLING AGENCIES

CHAS. G. JOHNSTON, 281 Madison, Chicago.
F. M. LETTS, 31 North Sixth, Philadelphia.
E. L. BOWLES, 72 Warren, New York.
McINTIRE & CHANDLER, 97 Portland, Boston.

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A Bolt Built for Buggy Building



THE NORTH BOLT

MANUFACTURED BY THE

CLEVELAND BOLT AND MFG. CO.,

W. C. NORTH, MANAGER. CLEVELAND, OHIO.

HEADQUARTERS

Wood Screws,
Tire Bolts,
Fin Head ...Bolts,
Seat Rods,
Rivets,



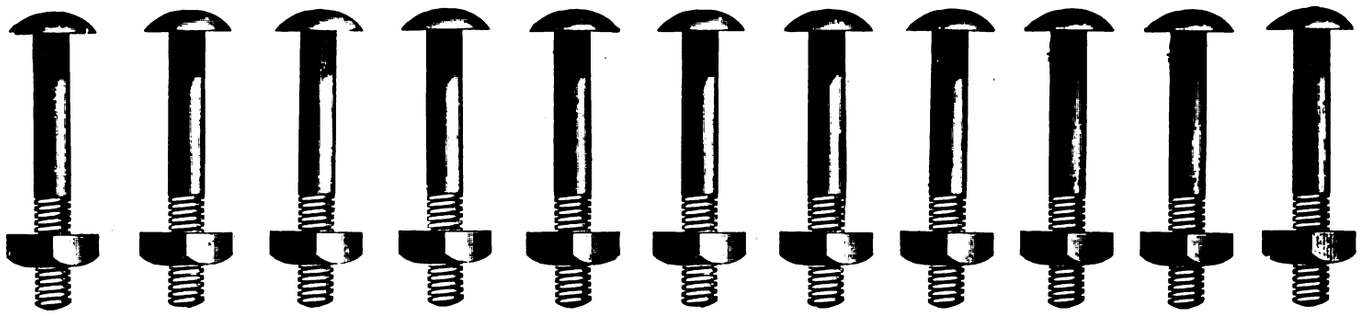
Machine Screws,
Stove Bolts,
Stove Rods,
Tacks,
Special Goods.

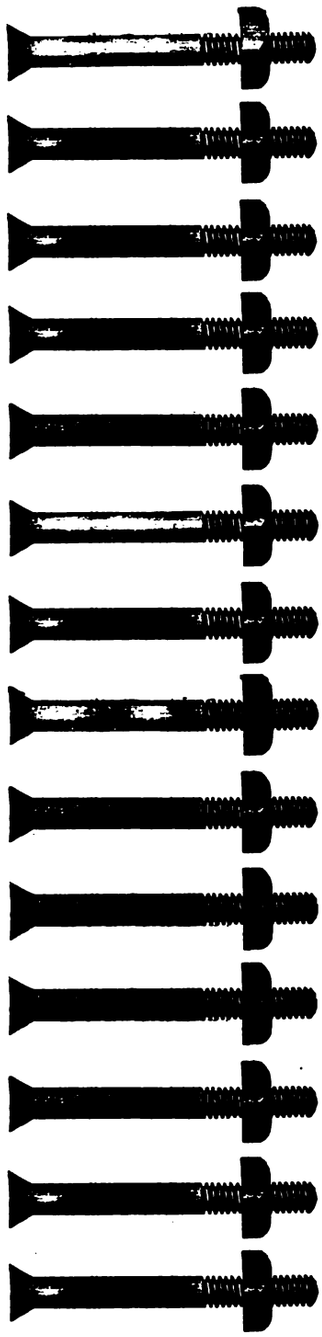
...THE...

National Screw & Tack Co.

CLEVELAND, OHIO.

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We claim First place as Manufacturers of Small Bolts!

WATCH US GROW!!!

OUR MOTTO IS

"QUALITY SERVICE

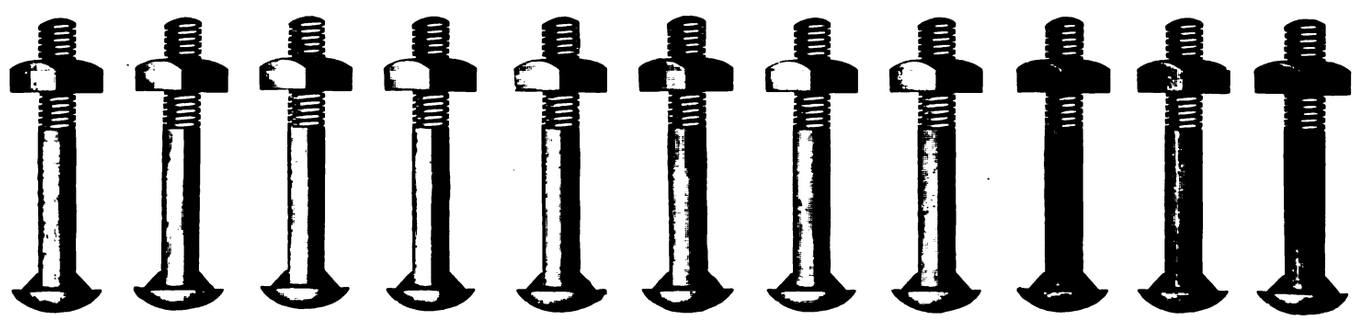
.... AND ....

Fair Dealing with All."

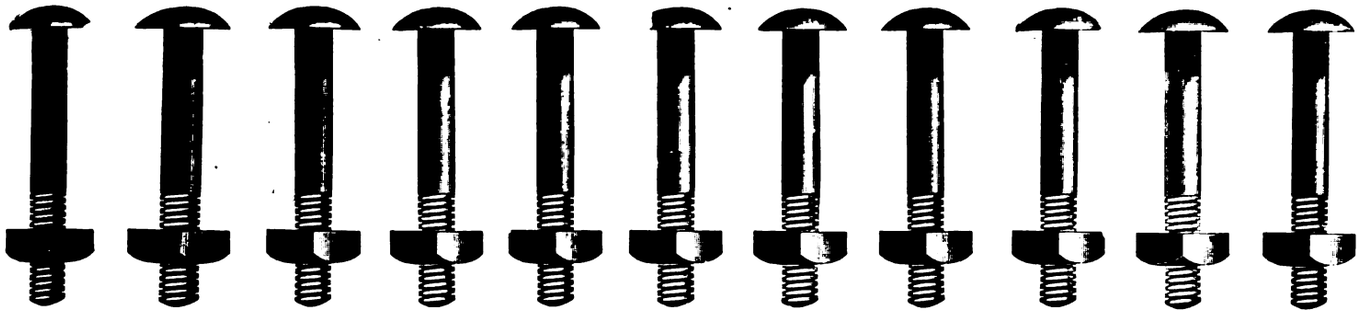
WE MAKE THE PERSONAL ACQUAINTANCE OF OUR CUSTOMERS AND FAMILIARIZE OURSELVES WITH THEIR REQUIREMENTS.

The Kirk-Latty Mfg. Co.

Cleveland, Ohio.



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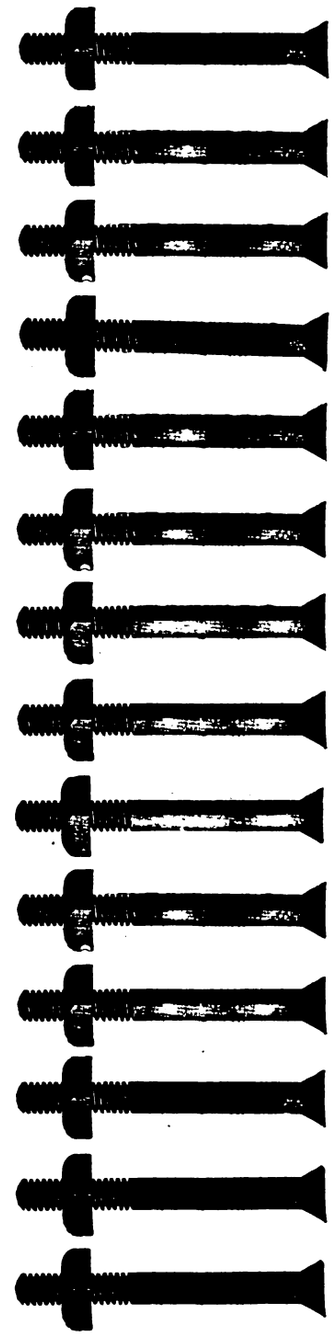
WE MAKE....

The Celebrated "Cleveland" Tire Bolt, : : :

The Celebrated "Cleveland" Carriage Bolt,

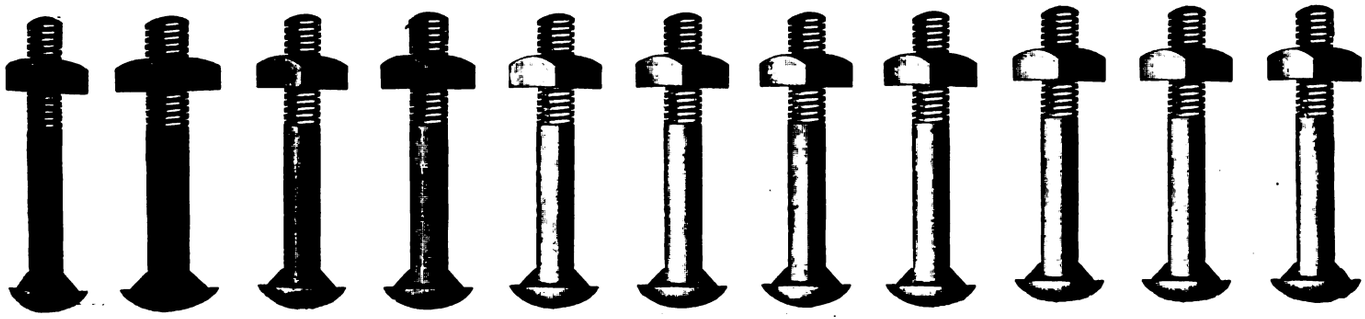
A Fin Head Bolt of Superior Quality. : : : :

We advertise the great renown
Achieved by Kirk-Latty of Cleveland town,
Our CLEVELAND TIRE BOLT is just right,
Our CLEVELAND CARRIAGE BOLT's out of sight,
Send for samples sure to-day,
That's an investment that will pay,
If you use our bolts, you use the best,
Our catalogue sent you on request.



The Kirk-Latty Mfg. Co.

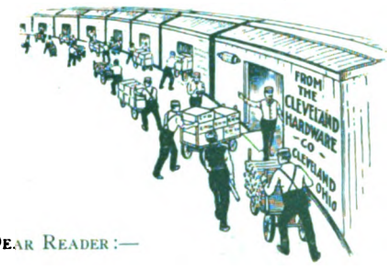
Cleveland, Ohio.



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ROLLED STEEL VEHICLE HARDWARE

AN OPEN LETTER.



DEAR READER:—

Yes, the past season has been one continuous round of unalloyed and unparalleled activity for us. Night and day were the wheels kept turning in our noisy plant devoted to the manufacture of Rolled Steel Vehicle Hardware, and "from dewy morn till stilly (?) eve," as the poet puts it, the office force was kept busy as the proverbial "boy fighting bumblebees."

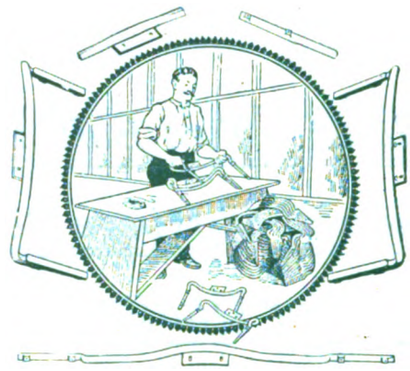
We had laid up a generous stock of goods in our warehouse, but the demand was unprecedented and the supply dwindled down, like fruit at the boys' picnic. However, we buckled right in and made every effort to meet the emergency, running our factory day and night to its fullest capacity and at the same time hurrying along a big addition to our already extensive plant. This addition has been completed and puts us in better shape than ever before to expeditiously handle a large volume of business. Our big new warehouse and office building adds over 70,000 square feet of floor surface to the plant, giving a vast increase in warehouse room available, while the former warehouse has been remodeled and filled with machinery, thus adding largely to our manufacturing capacity. The big advantage this gives us for the coming season is readily apparent and we are already taking time by the forelock in getting ready for it, and are filling our warehouse bins with goods galore to stand us in good stead against its busy days. We shall certainly spare no effort to be in readiness for the demand of the coming season when it comes.



FRUIT AT THE PICNIC

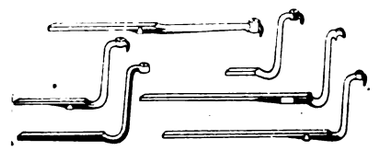
Chorus: Say, Jimmie, give *me* the core.
Jimmie: Ain't going to *be* no core!

Now a few words about our goods; we'll "make it brief," but make your orders as lengthy and as many as you can.



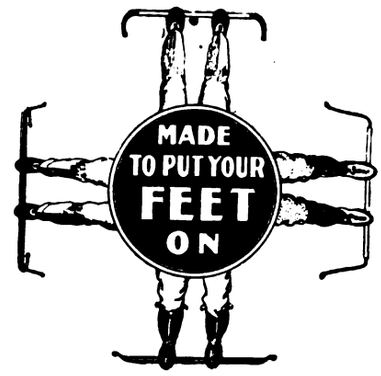
BAILEY HANGERS.

Firstly: We want your orders for our Genuine Bailey Hangers, made under license from the patentee. Our wrought hangers are surely winners—the demand proves the assertion. We make them in both Buggy and Surrey size and to clip or to bolt on spring. We make them of Rolled Steel and furnish them bent to shape or straight—just as you want them. If you like we can send you the separate forgings for centers and ends, and you can finish them yourself.



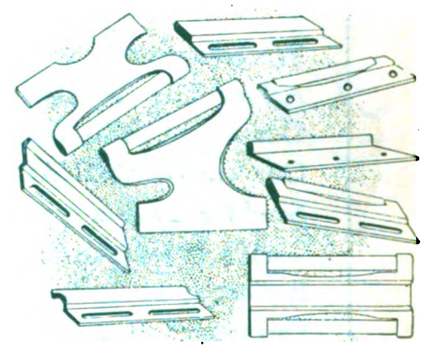
BODY LOOPS.

The popularity of our Rolled Steel Body Loops still continues, as shown by the enormous number we furnish every year. It takes 24 pages in our bright red catalogue to list the different styles and sizes we offer. Most anyone ought to be able to find what he wants in such an assortment as that. Made from Rolled Steel, rolled in our own mill and finished in our own factory. The demand for them shows the satisfaction they give.



TOE RAILS.

Perhaps you know we make nearly all the toe rails in the United States and this is why: Our toe rails are made of Rolled Steel and are neat, light and strong—the kind that last. Patterns and sizes galore. Prices down to rock bottom. If that combination doesn't deserve the trade we don't know what would deserve it.



RUB IRONS.

MADE TO RUB UP AGAINST.

ROLLER RUB IRONS.—A practical necessity where rubber tires are used. Made in a variety of shapes and styles, some with steel bodies and some with malleable; all with steel rollers. Price practically cut in two from what you were originally paying for them before we commenced making them. Get our prices if you haven't them already.

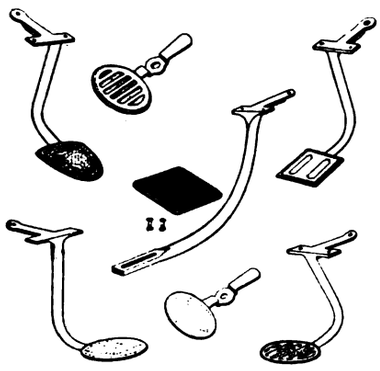
STEEL RUB IRONS.—Used where roller rub irons are not desired. Rolled to shape in our mill, cut and punched by automatic machinery and made by the cheapest producing process in the world. Cost no more than cast rub irons. You readily see the advantage of their use.

THE CLEVELAND HARDWARE CO.

CLEVELAND, OHIO, U. S. A.

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ROLLED STEEL VEHICLE HARDWARE



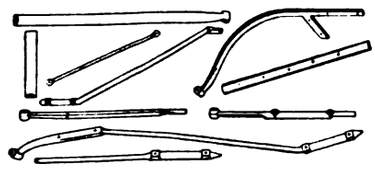
GOOD STEPS TO TAKE.

Try us on your next order for steps. We have a big assortment of Rubber Pad and Rolled Steel Steps for Buggies, Phaetons, Surreys, Bike Wagons, etc., and in all the popular shapes of pads—round, square, D pad and oval. A number of attractive new designs recently added to the list. Send for particulars if you are not posted about them.



ROLLED STEEL SPRING BARS.

Our price places Rolled Steel Spring Bars within reach of every carriage builder. The strongest Spring Bars made, and the kind to use. Neater and better than wood and almost as cheap. Sold at a fraction of what it would cost to hammer them out by hand. List of sizes largely increased. Send for special Spring Bar Circular.



SHAFT IRONS, POLE BRACES, ETC.

Tell us about your wants in shaft irons, pole braces, reach iron, etc.

SHAFT IRONS.—Rolled in solid pieces, with eye forged instead of being welded on iron. Furnished in sets of long and short pieces; or finished complete and ready to bolt on shafts.

POLE BRACES.—Finished complete, ready to put on poles; or, if preferred, we furnish the drop forged stub and brace ends and you can finish them yourself.

REACH IRON.—For Reaches, Stay Braces and Cross Braces,—we furnish it either blank, cut to length, or punched to pattern ready to put on the job. You furnish the pattern, we duplicate it. Made of Rolled Steel. Price, of course, is right.

OTHER GOODS.

Write us about other goods you need. Send for our bright red catalogue and get posted on our full line. Examine this list of Carriage Hardware and let us tell you about anything you can use in your work:

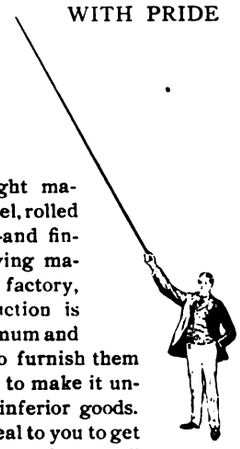
Bailey Hangers	Pole Tee Irons
Body Loops	Reach Iron
Canopy Top Irons	Rub Irons
Cart Heel Irons	Rub Irons, Roller
Chafe Irons	Shaft Irons
Clip Yokes	Shaft Shackles
Cross Braces	Shaft Steel
Dash Channels	Shaft Tee Plates
Dash Feet	Sill Plates
Dayton Standards	Spring Bars
Extension Top Body Irons	Stay Braces
	Steps, Rubber Pad
Felloe Plates	Steps, Rolled Steel
Fender Irons	Step Plates
Panel Irons	Step Shanks
Pole Brace Iron	Tire
Pole Hammer Straps	Toe Rails

And a full line of

Farm Wagon Hardware.

WE POINT WITH PRIDE

To our line of Rolled Steel Specialties and their reception at the hands of the trade. Made of high grade wrought material,—Rolled Steel, rolled in our own mill—and finished by labor saving machinery in our own factory, the cost of production is reduced to a minimum and we are enabled to furnish them at prices so low as to make it unreasonable to use inferior goods. It means a good deal to you to get wrought goods at the price we sell them and without resorting to the expensive luxury of hammering them out by hand.



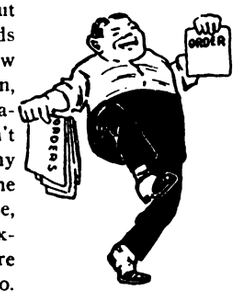
IN CONCLUSION.

Don't fail to write us about anything you need in our line, either now or later on. Like as not it has been a long while since we have had a letter from you—does this picture represent the situation? It will pay you to write often and keep posted on the subject. This will not only keep the mail man busy, both going and coming, but will bring you information that it will be worth money to you to have.



Don't be afraid to ask us a whole lot of questions about what we have and what we can do for you. That's what we are here for and a chance to tell you all about it will be greatly appreciated.

Don't put off till next week or next month the order you might just as well send us to-day. The sooner you let us show you just what we can do for you, the better we will feel about it. Try the goods now and see how you like them. Then, when your busy season comes you won't have to lose any time hunting for the right goods to use, but will know by experience that we are the ones to come to.



Supplementary Catalogue for 1901, showing new goods, is now ready. If you haven't had it ask—we want you to have it.

We solicit your valued favors and commands.

The Cleveland Hardware Co.

Makers of !!!!!

Rolled Steel
Vehicle Hardware

CLEVELAND, OHIO

THE CLEVELAND HARDWARE CO.

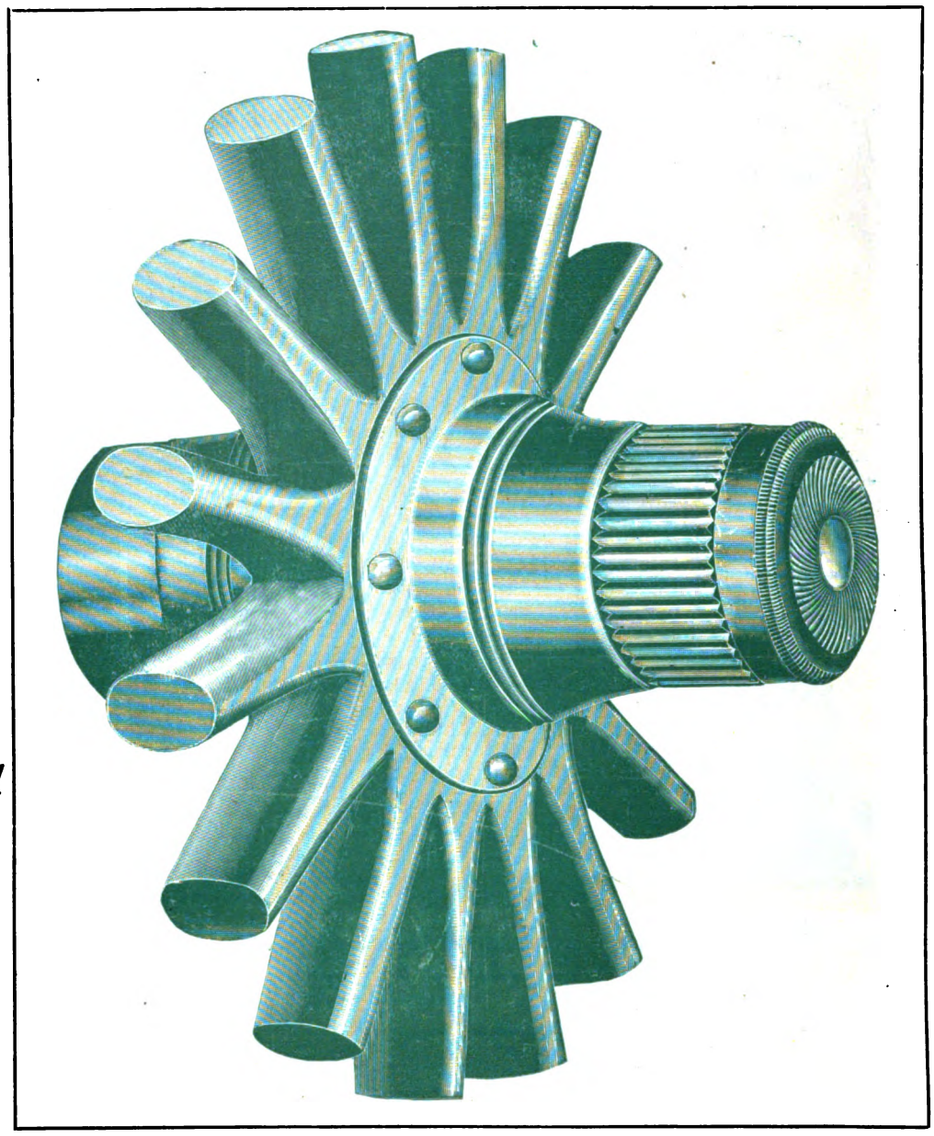
CLEVELAND, OHIO, U. S. A.

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CLIMAX HUB CASTINGS

Stylish

Refined



Latest Development in Hub Art

COMPLETE IN APPEARANCE.

Either With or Without Higgin's Dust Cap

DUST CAP (IF USED) APPLIED TO HUB CASTING DIRECT

No Shell or Rim Required

YOUR WHEEL MAKER WILL FURNISH THEM

Manufactured by

The National Malleable Castings Co.

CLEVELAND, OHIO

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FOR SWELL TURNOUTS

"THE ARMSTRONG"

Thousands in Use all Over the World

Our Two-Leaf Spring for Buggies, have you tried them? If not, write to us and let us tell you why it is to your interest to use them. Oblige us by mentioning this paper when you write.

J. B. ARMSTRONG MFG. Co.

FLINT, MICHIGAN

ALL KINDS OF CARRIAGE AND WAGON SPRINGS

Please mention "The Hub" when you write.

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WAGONS AND

AXLES

STANDARD

• BEAR

RUNNING GEAR

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See our Exhibit
AT THE
CARRIAGE DEALERS SHOW
GRAND CENTRAL PALACE
New York City

ROLLER BEARINGS

AUTOMOBILES

Send for new catalogue

STANDARD ROLLER BEARING CO.,
2326 MARKET ST.
PHILADELPHIA, PA.

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THE OLD RELIABLE

THE

J.A.&D.P. COOPER CO.

We are furnishing our Ironed Up Sets better and at lower prices than you can assemble the parts and put them up yourself.

We have greatly increased our factory facilities and are giving prompt service.

We are recognized leaders and the only practical carriage makers in the gearwood trade.

We furnish all styles of gearwoods made to order.

THE

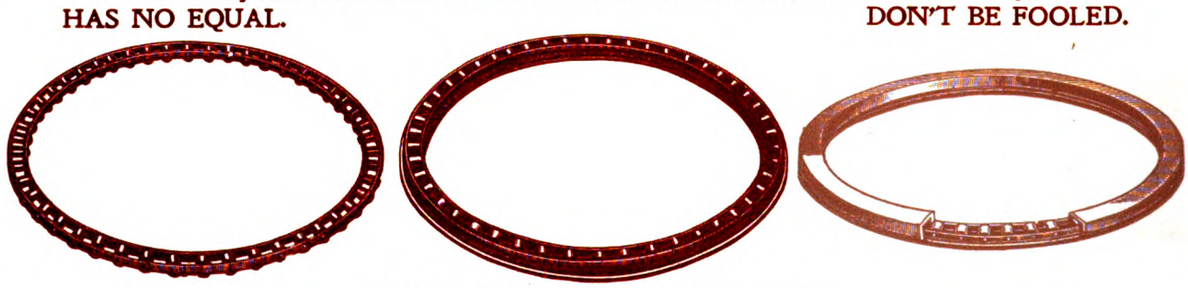
J. A. & D. P. COOPER CO.

STRUTHERS, OHIO

THE NIELSON
Roller-Bearing Fifth Wheel.

is the only PERFECTED and PRACTICAL ROLLER-BEARING FIFTH WHEEL on the Market to-day.

HAS NO EQUAL. DON'T BE FOOLED.



WHY THE NIELSON IS THE BEST.

It is the product of a practical wagon builder, who has made a careful study of his trade and the necessity of developing something new in the way of a fifth wheel that would overcome the friction caused by the old circle in use on all kinds of platform vehicles. The present fifth wheel is the outcome of years of experiment, and contains all the good features lacking on other fifth wheels. The rollers, while an important part of the Nielson patent, without the other features, would be as worthless as some others that are offered as "the best."

Don't let anybody tell you that So and So's Roller Bearing Fifth Wheel is just as good as the Nielson.

Roller-bearings, like ball bearings, to prove of value must be properly housed. This is one of the greatest practical points on the Nielson, as it is constructed so that neither dust nor the elements to which fifth wheels are subject can affect the rollers.

As the rollers overcome all friction, the use of oil, grease or other lubricants is obviated, and thus when once the Nielson is attached to a vehicle, the user need give this part of the vehicle no further thought, as it will outlast any vehicle. It always works easy, and never gets out of order. No worry about broken shafts or poles, as the Nielson turns easily under the heaviest load. It is a godsend to dray horses, as well as to the users of vehicles for mercantile purposes, as the Nielson not only saves the horses, but prolongs the life of the vehicle.

YOU WANT THE BEST. GET THE NIELSON.

Ask your dealer or write for full particulars to

CHRISTEN NIELSON, 745 Third Avenue, BROOKLYN, N. Y.

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COMPARE

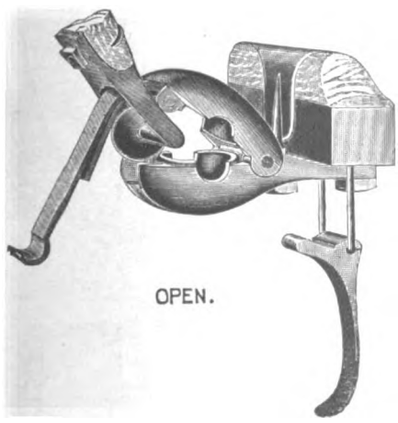
The Mulholland Shaft Coupler..

with any other Coupler on the market, and we are confident you will concede its superiority.

It is correct in principle, and has no equal for strength, workmanship and neatness in appearance.

We ask you to make the comparison and judge for yourself.

The Mulholland Coupler,



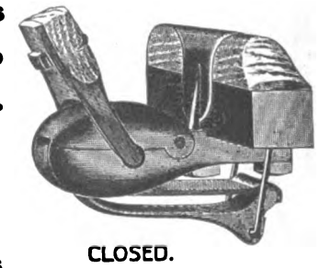
has the following features which are possessed by no other SHAFT COUPLER.

IT IS DIRT PROOF.

The Jaws Interlock.

The Leather Bushings are Permanently Cemented in the Jaws.

The Link is made of Steel Wire, the Ends being Electrically Welded.



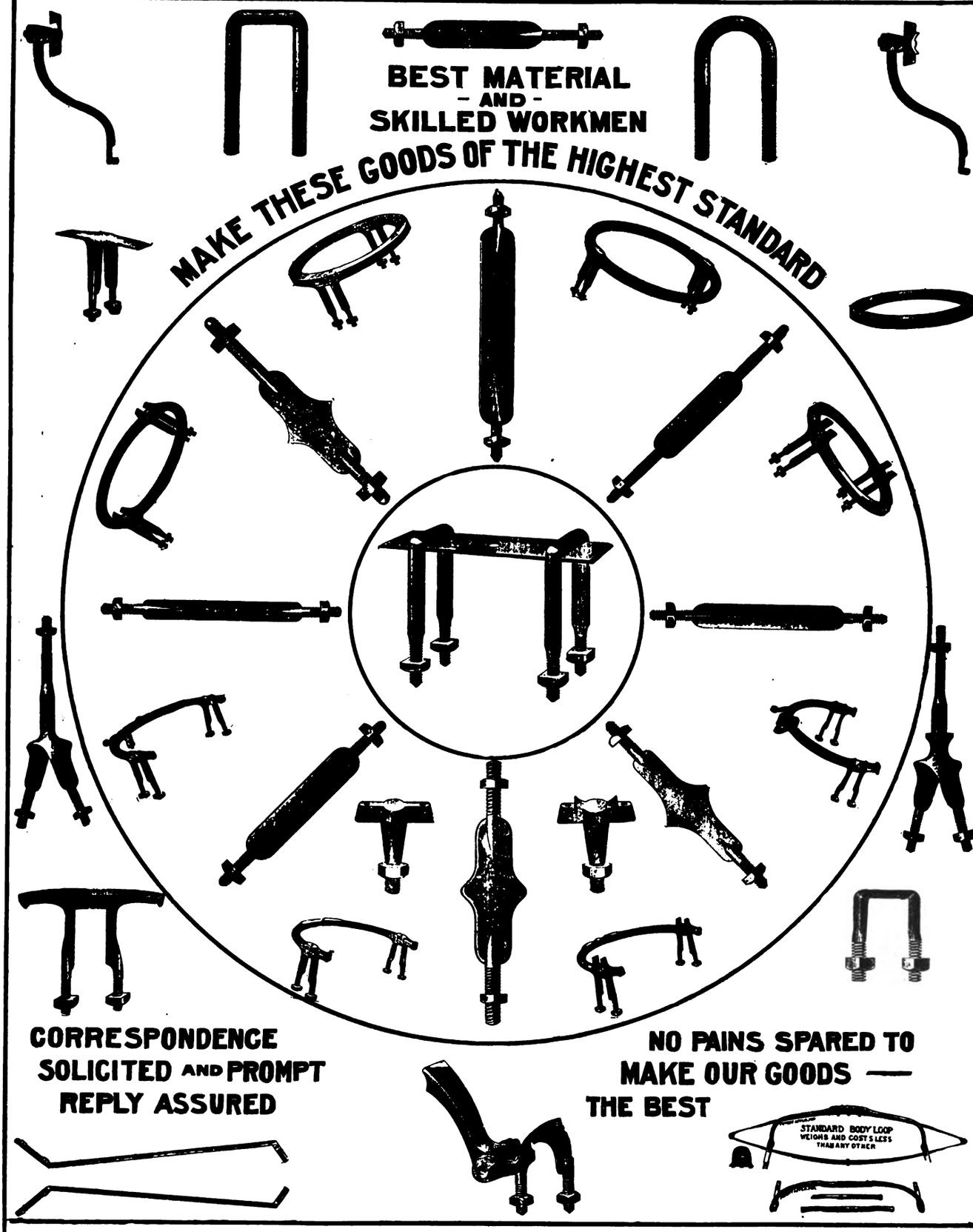
Write us, and we will tell you other reasons why you should use the Mulholland Shaft Coupler.

Mulholland Spring Co.,

DUNKIRK, N. Y.

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ONLY-A-FEW-OF-OUR-MAKE

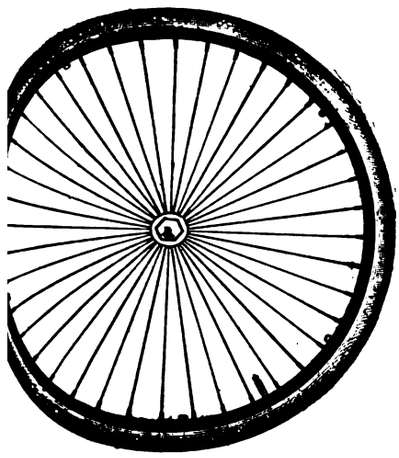


CATALOGUE AND PRICES TO BE HAD FOR THE ASKING

THE KEYSTONE FORGING CO.,
NORTHUMBERLAND, PA, U.S.A.

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"Built for Business"



A Pneumatic Buggy with the simplest B. B. adjustment possible--it's fool proof.

A Pneumatic made on correct lines.

A Pneumatic at once full of new ideas and selling points.

A Pneumatic with a wire wheel fitted with a bronze hub.

A Pneumatic with exclusive detail and appointments.

A Pneumatic that's right, and sold direct to the trade, either in the white or finished in the very highest manner.

Make your inquiries; we will tell you what you want to know.

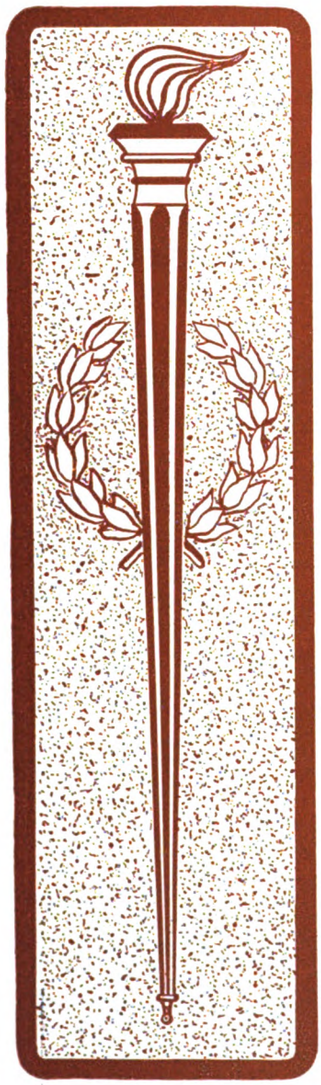
The Lashaway Carriage and Wheel Co.

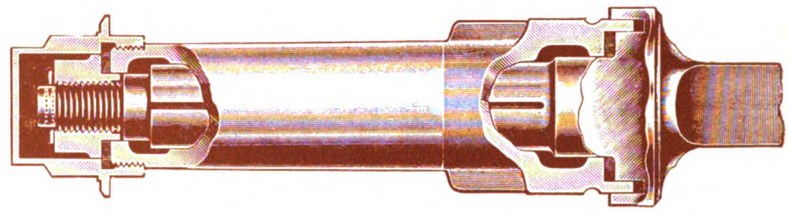
E. F. BUNKER, Mgr.

EAST BROOKFIELD, MASS.

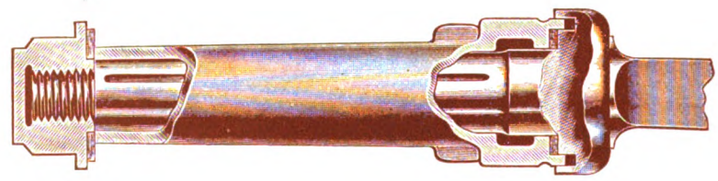
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DALZELL





Improved Collinge Axle.

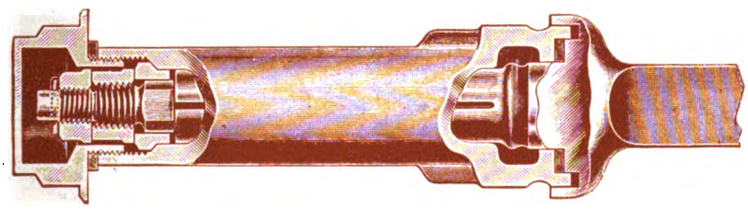


Collinge Collar Axle

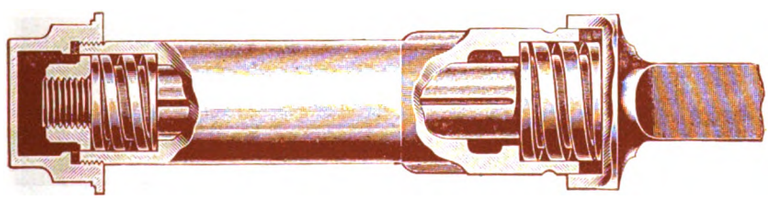
SOUTH EGRE

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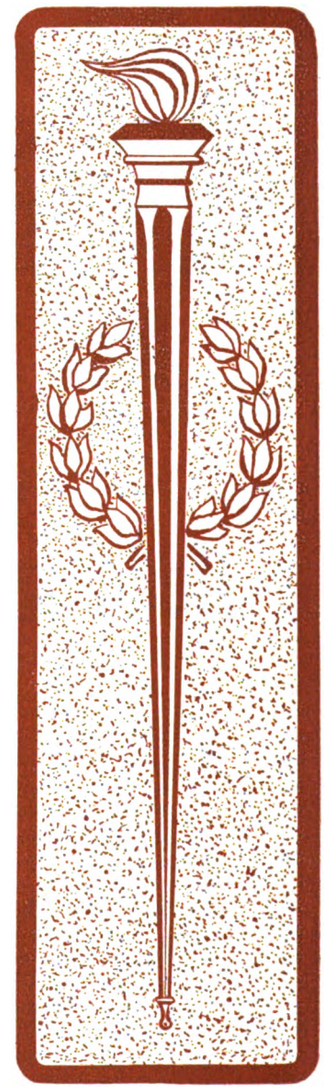
AXLE CO.



Full Collinge Axle.



Pray Spring Washer Axle.



MONT, MASS.

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THE TRIAD SPRING

MANUFACTURED BY

THE TUTHILL SPRING CO.,

CHICAGO, ILL.

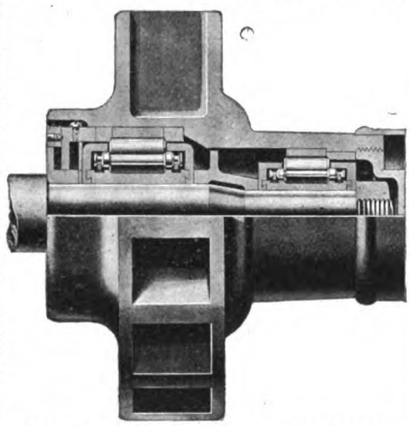
is superior to any other triple elliptic Spring yet produced.

1st. The shape of the spring permits it to work freely and in unison, and even when forced to its fullest capacity.

2nd. The upper and lower spring will pass each other and become a straight line without buckling or breaking away.

3rd. There is no wear on bolts, and the couplings are so constructed as to form a perfect cover for the spring ends.

4th. When painted the triad spring will show no broken paint joints in operation. Give it a trial.



American Roller Bearing Co.,

OFFICES AND FACTORY:

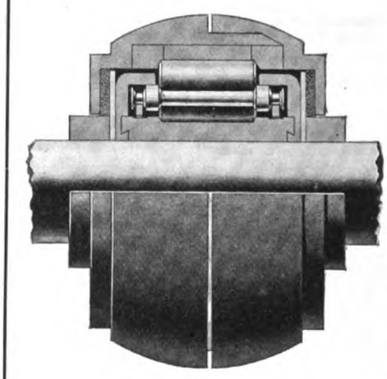
32 Binford Street, Boston, Mass.

Hubs, Wheels and Axles for all kinds of Carriage, Automobile, Wagon and Heavy Truck work.

Also single bearings for Shafting, Motors, Sheaves, Car Bearings, Automobile, Driving Axles, etc.

EUROPEAN BRANCH:
17 Soho Square,
LONDON, ENGLAND.

WESTERN DEPT.,
H. Franklin Peterson,
164 Lake Street,
CHICAGO, - - - ILL.



Redding's Harness and Saddlery Directory

SEVENTH YEAR.

REDDING'S HARNESS AND SADDLERY DIRECTORY FOR 1901 contains some new and valuable features and is an up-to-date twentieth century publication. This directory has **always** been the **standard,** and every edition has been an advance in accuracy and usefulness over the preceding issue.

The 1901 edition has **a new arrangement** of the **wholesale** and **jobbing trade** that makes it very convenient for those who wish to separate *association jobbers* from those not at present so recognized.

A new part has been added that will be found a very serviceable list of **dealers in harness,** as distinguished from *retail harness* manufacturers. To many who solicit the vehicle, implement and hardware trade, as well as department stores, this will prove of great convenience. These trades are handling harness and horse goods in increasing volume yearly, and such a list is a distinct advantage to the trade.

The Buyer's Guide (Part III. of the Directory) has always been a valuable feature. This is an alphabetical classification of all the many and various articles made to sell to the trade from Axle Grease, under "A," down to and including Wool Saddle Linings under "W," and the names and addresses of those making the various articles.

As the export trade is now inviting attention, a list of exporters of saddlery is also published.

The body and the bulk of the Directory is, of course, made up of **the retail harness makers of the country.** They are conveniently arranged under State, Town and County, in the larger cities giving the street number of the occupant's place of business. Those whose rating (approximate) is over $1,000, are marked so as to be easily distinguished.

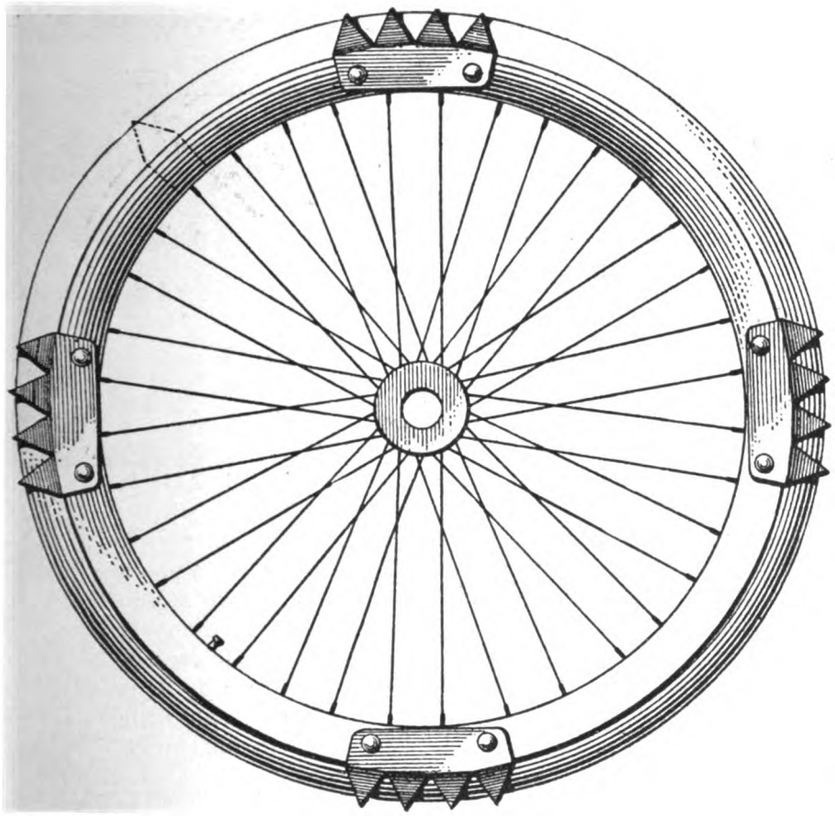
The 1901 edition is nearly exhausted, and those desiring copies should send $2.00 at once to

Trade News Publishing Company.

24-26 MURRAY STREET, NEW YORK.

Please mention "The Hub" when you write.

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See Those Teeth?

The Gripping Members on the Rim of the Wheel

Prevent Slipping on Mud, Ice or Snow

They are easily and quickly removed when summer comes.
They will save the price of a tire in preventing it from tearing loose.
They can run on ice on a 60 per cent. grade.
They are the ONLY device that SUCCESSFULLY SOLVES THE SLIPPING PROBLEM.

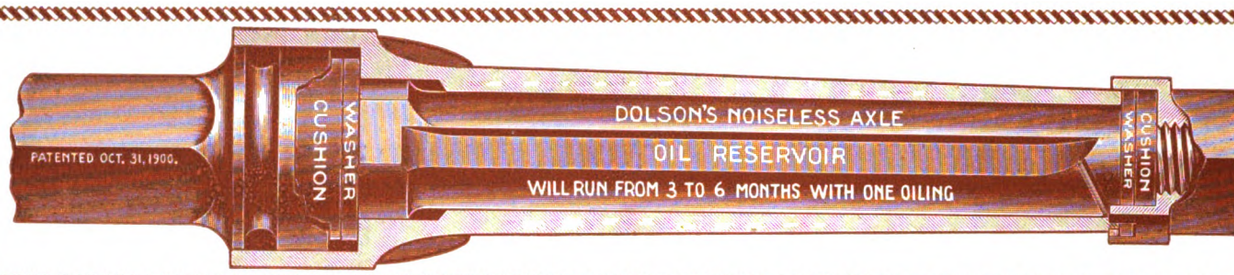
CAULFIELD'S
PATENT GRIP WHEEL
FOR AUTOMOBILES

U. S. A. Patent No. 670,664 *Canadian Patent No. 71,089*

Particulars on Application to **JOHN CAULFIELD,**

74 Nelson Street **BROOKLYN, N. Y.**

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Dolson's Noiseless Axle

THE GREATEST IMPROVEMENT ATTAINED IN AN AXLE

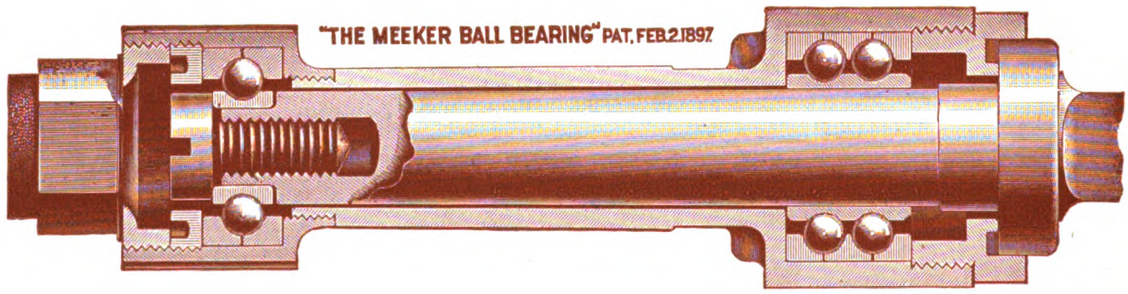
IS absolutely noiseless, even though the washers have become badly worn. This Axle is constructed with a cushion in the collar and the nut. These cushions relieve the wheels from sudden jars. The fibre washers rest against the cushions and are so constructed that they do not revolve. The fibre washer which is contained inthe nut when in place rests against the shoulder of the arm and the point of the box. The spiral groove at the point of the arm prevents the exit of oil. The peculiar shaped groove on the top of the Axle collects the oil from the box as the wheel revolves, and the "V" opening allows it to escape. This Axle is not complicated in its construction—simply put on the nut and screw it up. It is neat and tasty in appearance, will run from 3 to 6 months with one oiling and is the only Axle specially adapted to rubber tire vehicles, as it will not rattle or jar under any circumstances.

FOR FURTHER PARTICULARS, AND PRICES, ADDRESS,

Liggett Spring and Axle Company,

PITTSBURG, PA.

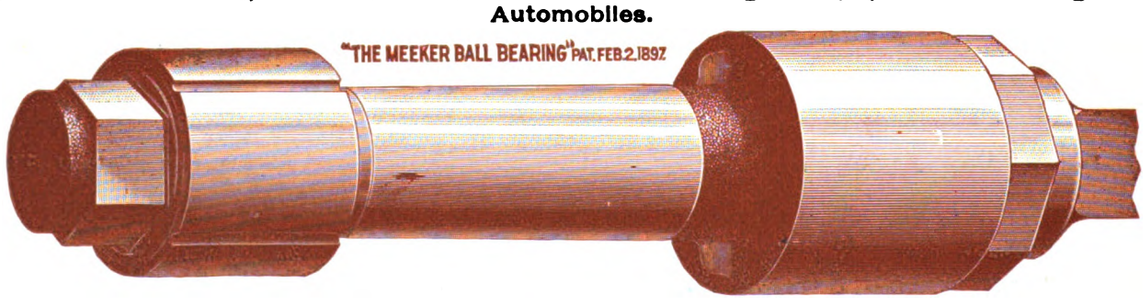
THE MEEKER BALL BEARINGS



Cheapest! Because they are the best. All sizes built in proportion to the work required of them. Write for our Catalogue of Carriage Specialties

LOW WOOD HUB AND SARVEN WHEELS.

The Best Wheels Made, with Pneumatic Tires and Ball-Bearing Axles, for Runabout Wagons and Automobiles.



THE MEEKER MFG. CO., DAYTON, OHIO.

Please mention "The Hub" when you write.

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TUBULAR - STEEL - AXLES.

SHELBY STEEL TUBE CO.

TUBULAR - STEEL - AXLES.

Seamless Tubing of the Highest Grade for

EVERY STYLE OF VEHICLE CONSTRUCTION

SUCH AS

TUBULAR SULKY FRAMES
TUBULAR REACHES
TUBULAR AXLES
TUBULAR WHIFFLETREES
TUBULAR WHEELS
TUBULAR GEARS

AND

TUBULAR AUTOMOBILE FRAMES

TAPERING & BENDING OF TUBING FOR ANY STYLE OF VEHICULAR WORK

TUBULAR - STEEL - AXLES.

SHELBY STEEL TUBE CO.

258 BROADWAY, NEW YORK

THE ROOKERY, CHICAGO

TUBULAR - STEEL - AXLES.

Please mention "The Hub" when you write.

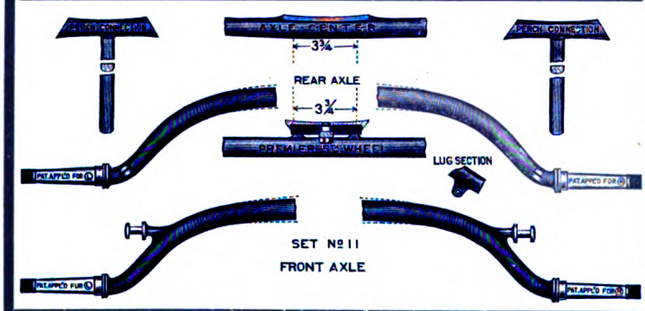
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We have purchased the Jamesville Manufacturing Co.'s plant, Jamesville, N. Y., and are now ready to receive your orders for

COMPLETE FORGED

CARRIAGE GEARS

BALL BEARING Steel Wheels, Sulky Wheels, Bushings for Wood Wheels, Axles and Attachments.



STEEL RIMS AND CHANNELS



FOR AUTOMOBILES:

Ball Bearing Steel Wheels.
Ball Bearing Hubs and Plain Bearing,
Steering Device,
Steel Rims.

FOR BICYCLES:

Champion Hubs with Knock-out Axles,
Vulcan Hubs,
Steel Wire Wheels,
Champion 14 oz. Racing Hubs,
Spokes and Nipples.

SEE OUR EXHIBITS NEW YORK AND CINCINNATI SHOWS

I. A. WESTON CO.

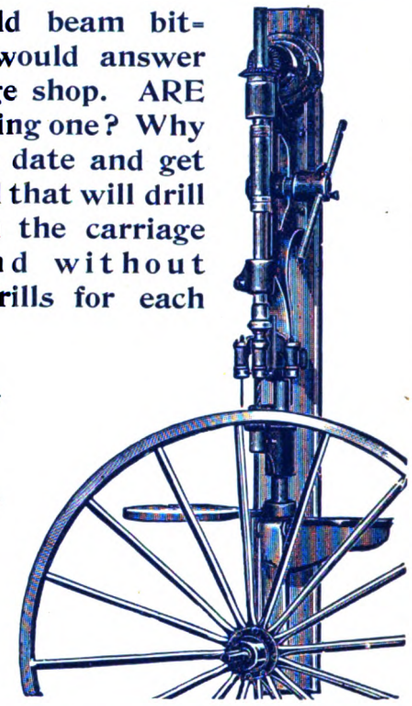
FACTORIES

SYRACUSE, N. Y.
JAMESVIL E, N. Y.

There Was a Time

when an old beam bit-stock drill would answer for a carriage shop. ARE YOU still using one? Why not be up to date and get a turret drill that will drill any hole on the carriage quickly, and without changing drills for each side hole.

Especially Adapted For Tires.



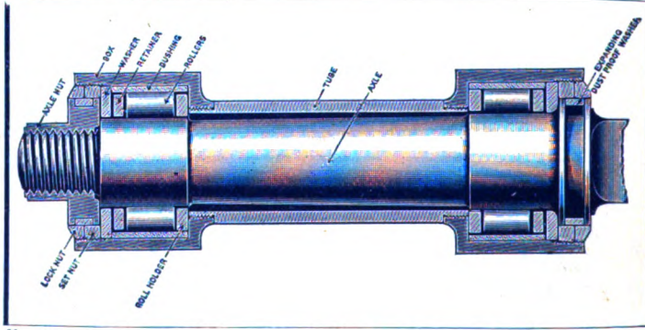
THE GEORGE BURNHAM CO.,

21 Hermon Street, WORCESTER, MASS.

STRENGTH DURABILITY and SIMPLICITY

are distinctive features of the.....

MORSE ROLLER BEARING AXLE.



The Morse Roller Bearing Fifth Wheel will interest you, too.

Write for circulars and price list.

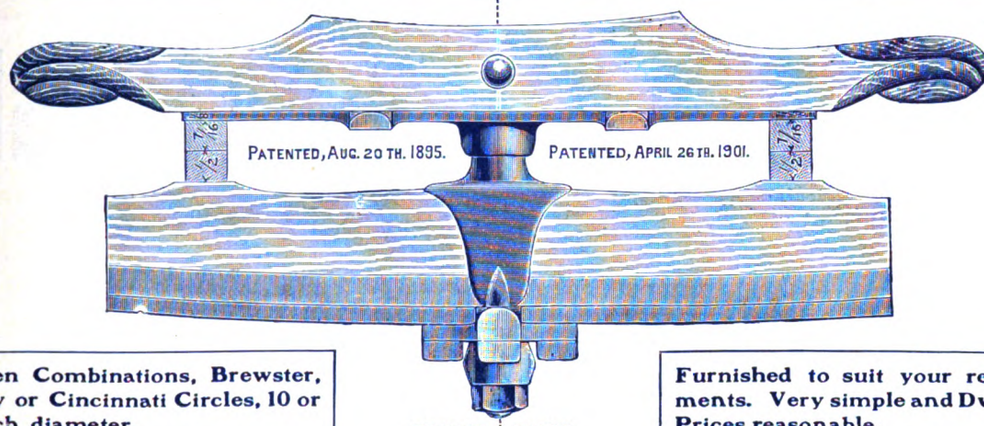
THE BANTAM MFG. CO.

BANTAM, CONN.

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OVR IMPROVED 1901

REAR CLIP KING BOLT GEAR SETS



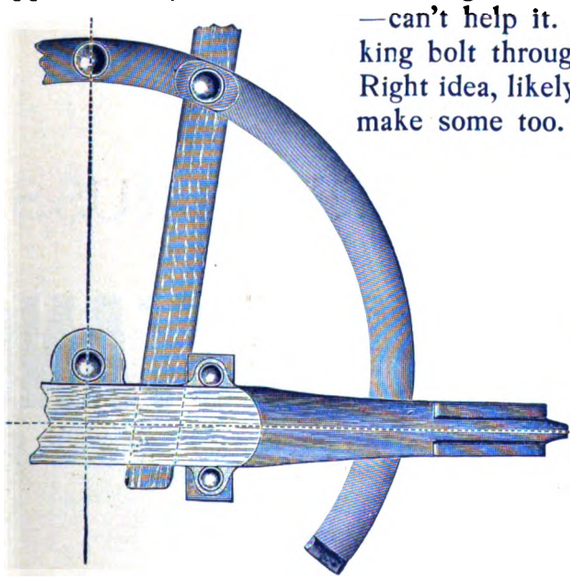
Sixteen Combinations, Brewster, Derby or Cincinnati Circles, 10 or 12-inch diameter.

FRONT VIEW

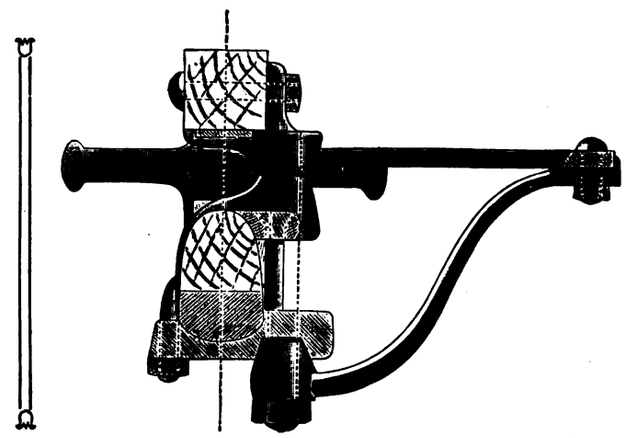
Furnished to suit your requirements. Very simple and Durable. Prices reasonable.

FOR BUGGIES AND SURREYS

We are getting in touch with the trade more every day. Just look at that front view appearance—just the same as a regular king bolt. Like that? Manufacturers see the point—can't help it. It appeals to them. Just notice—there is no king bolt through the head block or spring to break the paint. Right idea, likely to save a lot of money. Give us a chance to make some too. Another good idea.



TOP VIEW



CROSS SECTION

Just try one sample. You will be convinced we have something fine. A fine "Working Chart" for you to get your gears made to, sent by mail just for the asking. Correspondence solicited.

THE D. WILCOX MANUF'G CO.

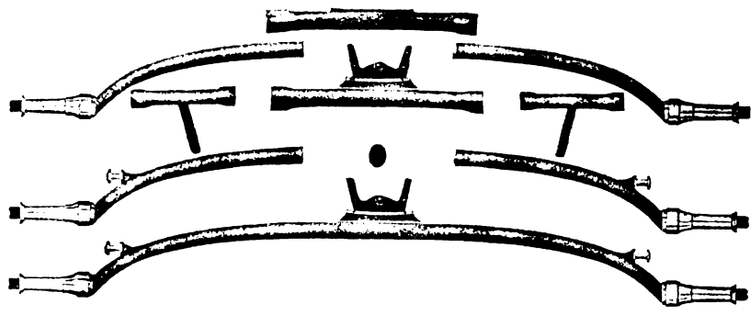
MECHANICSBURG, PA.

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New Designs & Be

OVAL HIGH ARCH, TRUE SWEEP

BIKE WAGON AXLES AND FORGINGS



Got the Metal Where It's Needed
Arch From the Collar
Not a Break
NOT A FLAT PLACE---A TRUE TRUSS

BALL-BEARING OR LONG DISTANCE WIRE WHEELS

For Cushion or Pneumatic Tires to Fit.

Weston-Mott Com

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r Goods Than Ever

BIKE WAGON AXLES AND FORGINGS

ROUND OR SWAGED

BUGGY OR SURREY WEIGHT

BALL-BEARING OR LONG DISTANCE

Wire Wheels

Steel Rims

New Flat Base Channel for 1¼ Inch and 1⅛ Inch Cushion Tires

See All These New Things at Our Exhibit at the N. Y. Show

nv, Utica, New York

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PREMIER

AXLE PATENTS.



WE hold Patents on Axle Forgings with Shaft and Brace lug design, as shown in cut above (also three other designs), and have licensed the parties named below to make and sell them. Infringers will be prosecuted.

LICENSEES:

The Sheldon Axle Co., Wilkesbarre, Pa.
The Wilcox Mfg. Co., Mechanicsburg, Pa.
The Billings & Spencer Co., Hartford, Conn.
The Premier Mfg. Co., Hartford, Conn.

Premier Mfg. Company,

HARTFORD, CONN.

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1902.



FOR the Season of 1901 and 1902 we will have a larger line than ever, in the way of

Wire Wheels,
Ball Bearing Axles,
Bushings (for Wood Wheels),
Gears,
Forging Axles, etc.,

and trust we may have an opportunity of submitting samples and prices before you close contract for your season's requirements in our line. We go after business anywhere and at any time.

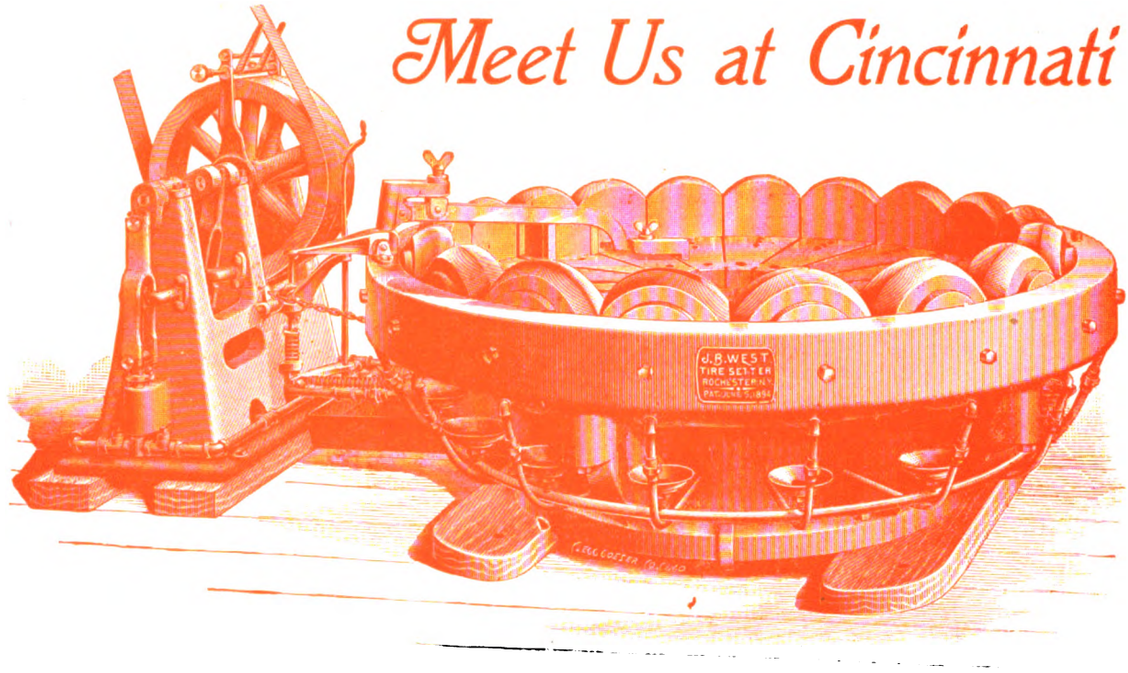


Premier Mfg. Company,

HARTFORD, CONN.

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Meet Us at Cincinnati



THE "West Hydraulic" Tire Setter will be on exhibition at the C. B. N. A. Convention, October 21st to 26th, and will be setting tires as usual. Our Messrs. Lattin and Tumalty will be in charge of exhibit and will be pleased to see any who are interested in tiring wheels, and explain the operation of machine or assist in investigating its work. ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: :::

It's a Good Machine and merits your attention. Here's the proof

JACKSON, MICH., Sept. 12th, 1901.

THE WEST TIRE SETTER CO.,
Rochester, N. Y.

GENTLEMEN :—In response to your favor of the 3rd inst. it gives us pleasure to testify to the merits of your latest improved Hydraulic Tire Setting Machine. Your No. 1 Machine, placed in our plant last fall, has been in constant use since that time and is giving the best of satisfaction. We can cheerfully recommend this machine to anyone in need of same.

Very truly yours,
IMPERIAL WHEEL CO.,
C. B. HAYES, Manager.

Address all correspondence to

The West Tire Setter Co.

ROCHESTER, N. Y.

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C.H.A.T.

Helps Secure Situations.

Carriage, Harness and Accessory Traveling Salesmen's Association

OF THE UNITED STATES.

All Commercial Travelers in Above Lines Eligible.
No Others. Pays Death Benefits.

Membership Fee, - - $3.00
Annual Dues, - - - - 1.00

Employers of Traveling Men eligible to join as associate members on payment of $5.00, and are exempt from all further dues.

Manufacturers of carriages, harness or goods that enter into their construction, jobbers of same, can secure good, reliable and efficient salesmen through our Association, as the members of this Association have the best facilities for knowing all about men who are seeking situations, and none will be recommended unless they are first class and worthy of support.

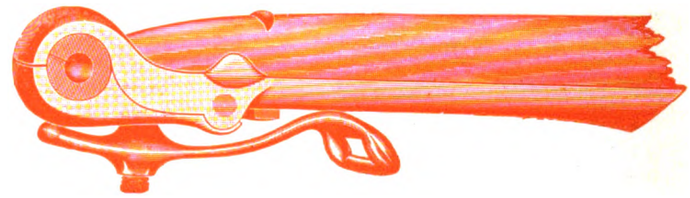
Salesmen in need of a situation, or manufacturers in need of a salesman, address for further information,

P. D. RANDALL, Secretary.

Board of Trade, Springfield, Mass.

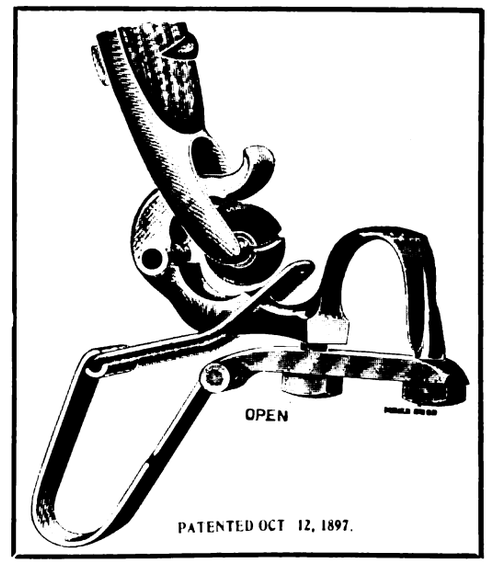
Eccles Adjustable Shaft Eye.

PATENTED AUGUST 28th, 1900.



Ball Bearing Shaft Coupling.

SEND FOR DESCRIPTIVE CIRCULARS AND PRICES.



ALSO GET OUR CATALOG SHOWING FULL LINE OF

Carriage Forgings.

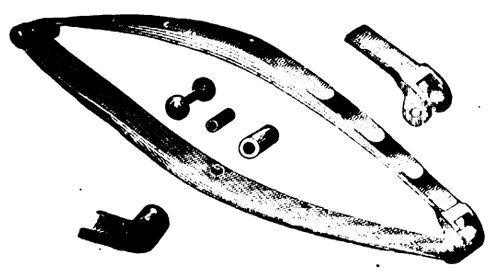
RICHARD ECCLES,

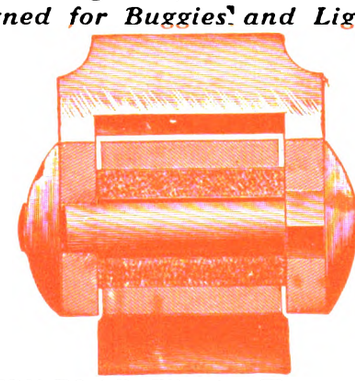
AUBURN, N. Y.

Elliptic and Coach Platform Springs

WITH RUBBER OPEN-HEADS.

LARGE SIZE.—Designed for Broughams, Landaus and Coaches.
SMALL SIZE.—Designed for Buggies and Light Carriages.





The Rubber Open-Head

SPRINGS

Work Freely Without Friction.

No Binding or Squeaking in the Heads or Eyes.

SPRINGS OF EVERY STYLE AND PATTERN TO ORDER,
ALSO CURTAIN ROLLERS AND CONCEALED HINGES.
Exclusively First-Class Work.—The Best that Can be Made.

Spring Perch Co.,
BRIDGEPORT, CONN.

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Fernald Quick Shifter and Anti-Rattlers.



Burton's Anti-Rattler & Bolt Holder No. 1.

PAT. NOVEMBER 15, 1887.

Trade Mark "Burton" Registered Oct. 5, 1897.

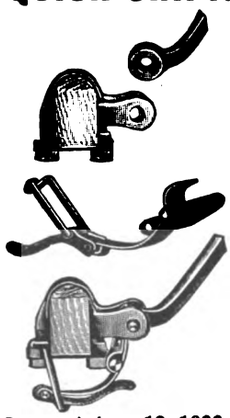
Burton's Anti-Rattlers are noiseless, easily inserted or taken out with a hammer without removing bolt, will not lose out, are made from the best steel, thoroughly tested, and will not break. Guaranteed to retain their strength. Where the No. 1 is used bolt cannot lose out.



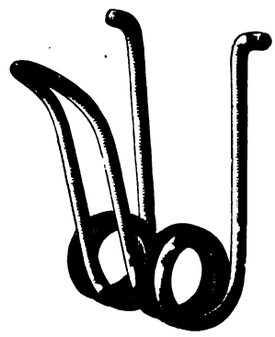


..IMPROVED..

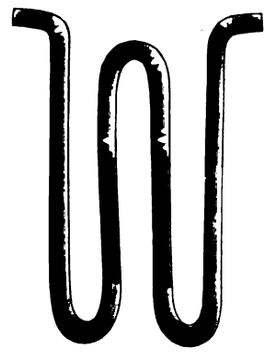
FERNALD QUICK SHIFT.



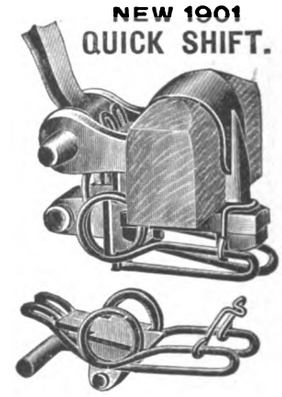
Patented June 18, 1899. Canada, July 17, 1899.



GEM WIRE No. 1.



TEMPERED WIRE DRIVE.



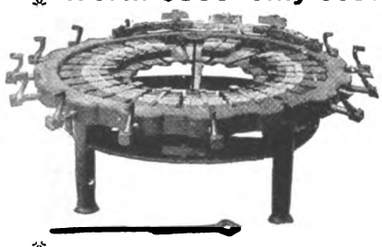
Patent Applied For.

FERNALD MFG. CO., North East, Pa., U. S. A.

Repair Shops, Take Notice.

THE HENDERSON HAND POWER TIRE SETTER IS A MONEY-MAKER.

Worth $500 (only cost $150).



900 Tires Per Month—Best Investment Ever Made.

DALLAS CITY, ILL., August 8, 1901.

This is to certify that on or about July 1st we purchased a Henderson Tire Setter, and up to date, or about one month, we have set 900 tires. We consider it the greatest money maker, and the best investment we ever made. It brings us trade in this line that we otherwise would not get if we did not have it. It does all and more than you claim for it. No up-to-date shop should be without a Henderson Tire Setter. Yours respectfully, WALTER BROS.

WRITE TO THE

STANDARD TIRE SETTER CO., Keokuk, Iowa

OF INTEREST TO

Manufacturers

Write for a copy of pamphlet just issued by the

Illinois Central R. R.

COMPANY

giving reliable information concerning nearly 200 desirable locations for industries and entitled

INDUSTRIAL SITES IN TEN STATES

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NO OIL NO GREASE

The TURNER Roller Bearing Fifth Wheel
The BRADSHAW Spool Roller Bearing Fifth Wheel
The KING Patent Roller Bearing Fifth Wheel

These are by far the BEST and CHEAPEST Roller Bearing Fifth Wheels on the Market for all kinds of Vehicles.

Send for Circulars and Price Lists

The TURNER MANUFACTURING COMPANY

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BACK IT UP

and we'll back you. You can safely guarantee the

Bradley Shaft Coupling

for noiselessness, simplicity and wearing qualities.

We are behind you with our guarantee. We know how good our Coupler is—we want you to know it for the profit there's in it—Your customers to know it for the good there is in it. 400,000 vehicles are Bradley Coupled. Are yours? Look for us at the National Dealers' New York Convention in October, the C. B. N. A. in Cincinnati in October and Tri-State Dealers' in Cincinnati in November.

C. C. BRADLEY & SON,

SYRACUSE, N. Y.

TRADE PAPER ADV. AGENCY, N.Y.

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"WE LEAD, OTHERS FOLLOW"

THE BUCKEYE MFG. CO.

WHOLESALE MANUFACTURERS OF

Ironed Vehicle Poles and Shafts

ALL STYLES AND GRADES

TRIMMED NECKYOKES

in twenty different styles • • • and all sizes

Rounded Shaft Straps, Flat Shaft Straps, Whiffletree Keys
Body Stay Straps, Pole Check Straps, &c.

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ANDERSON, IND., U. S A.

WE HAVE THE BEST EQUIPPED POLE AND SHAFT BENDING WORKS ON EARTH. WE ARE NOT CONNECTED IN ANY WAY WITH THE POLE AND SHAFT TRUST. WE ARE STRICTLY "IN IT."

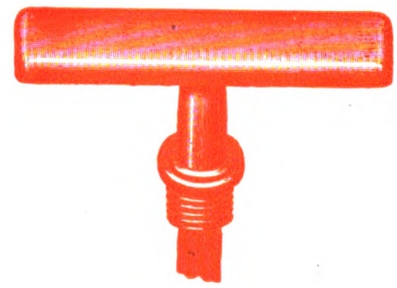
ANNOUNCEMENT
PREPARED TO FILL
ORDERS PROMPTLY

Dash and Seat Rails,
Body and Panel Back Rails,
Silver Plated Shaft Tips,
Etc.

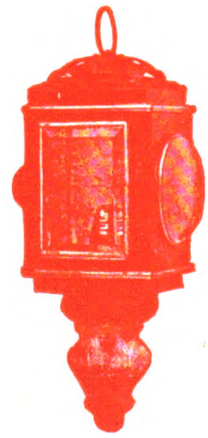
ENTERPRISE BRASS
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CINCINNATI, O.
M. C. WEIGLEIN PROP.
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BRIDGEPORT, CONN.



THE BEST ONLY.



LAMPS,
HANDLES,
BANDS,
POLE CRABS
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Morocco Covered Trimmings.



Warranted not to go out. For Runabouts, etc.

Hearse Lamps.
Hearse Mountings.

Please mention "The Hub" when you write.

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50 Per Cent. Draft Reduction.



PATENTS.
No. 606,635, June 28th, 1898.
No. 606,636, June 28th, 1898.
Other Patents Pending.

Also Patented in
GREAT BRITAIN, FRANCE, CANADA.
Patents in other Foreign Countries Pending.



Columbus O. May 28th, 1901.

Timken Roller Bearing Axle Co.,

St. Louis, Missouri,

Gentlemen:-

We are pleased to say that the Timken Roller Bearing Axles have proven a great success wherever we have used them.

One particular vehicle that we put them on, a large six-passenger carriage, we shipped to a customer in Chicago. He uses but one horse pulling this large carriage with from six to nine people in it. We mail you under separate cover a photograph of this carriage with nine passengers. This certainly shows a great saving in draft. We have used quite a number of sets of your axles and have yet to receive our first complaint regarding them.

We think you have the right principle, and that that principle is made a success by the pains-taking care which you exercise in fitting up the boxes and rollers. We expect to largely increase our use of your axles.

Very truly,

BUCKEYE BUGGY COMPANY.
Per
C E Jackson
MANAGER.

The Buckeye Buggy Co.,

COLUMBUS, OHIO,

Is one of the carriage builders who have adopted : : : : : : :

Timken Roller Bearing Axles

MANUFACTURED BY

Timken Roller Bearing Axle Co.,

ST. LOUIS, MO.

BRANCHES:

NEW YORK: 1769 Broadway.
BOSTON: Abbott-Downing Co., 388 Atlantic Avenue.
BALTIMORE: Leonhardt Wagon Mfg. Co., 412-420 East Saratoga Street.
PROVIDENCE, R. I.: 128-130 Washington Street.
WASHINGTON, D. C.: The Andrew J. Joyce Carriage Co., Cor. 14th and E Streets, N. W.
CHICAGO: N. Y. Life Building.
PHILADELPHIA: Fulton & Walker Co., 20th and Filbert Streets.

Stock of Axles carried at New York.

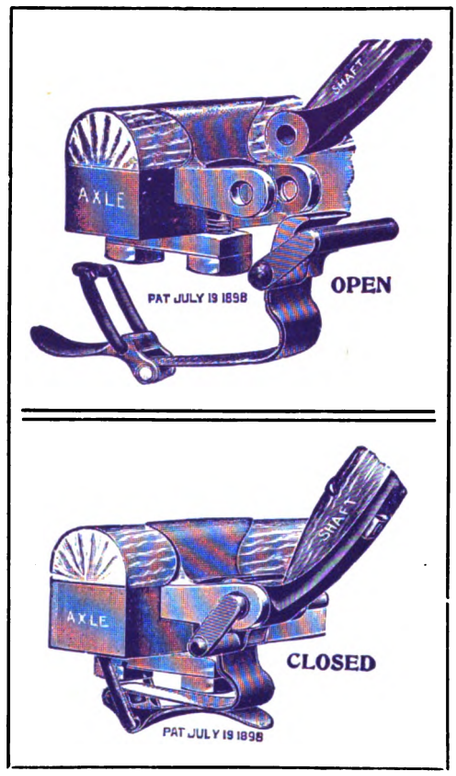
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IDEAL

Quick Shifter

AND

Anti-Rattler



The "Ideal" never fails. It is the most complete Anti-rattler and Quick Shifter on the market. Fits any wagon, new or old, without the use of mechanic or tools. Can change from pole to shafts in less time than it takes to tell it. Hand forged steel bolt, HEAVY BEARINGS, NO RUBBER OR LEATHER to get out of order. Oneida Community trap steel spring. A postal card will bring you pricelist. The "Ideal" is extremely popular—it helps sell carriages. They are their own testimonial.

IDEAL MFG. CO.

ONEIDA, N. Y., U. S. A.

THE "TRACER" TELLS.

THE "TRACER" TELLS Isn't it worth your while to learn what other Wholesale merchants know about Retailers who seek credit from you? The "Tracer" tells.

THE "TRACER" TELLS Isn't it worth your while to learn from other Wholesale merchants what record your would-be customer has made with them? The "Tracer" tells.

THE "TRACER" TELLS Isn't it worth your while to be able to ask several thousand merchants everywhere what they know about a man you want to know about? The "Tracer" tells.

THE "TRACER" TELLS Isn't it worth while to learn that one of your customers, who is prompt in New York, Philadelphia or St. Louis, is getting *very slow pay* in Chicago and Boston? The "Tracer" tells.

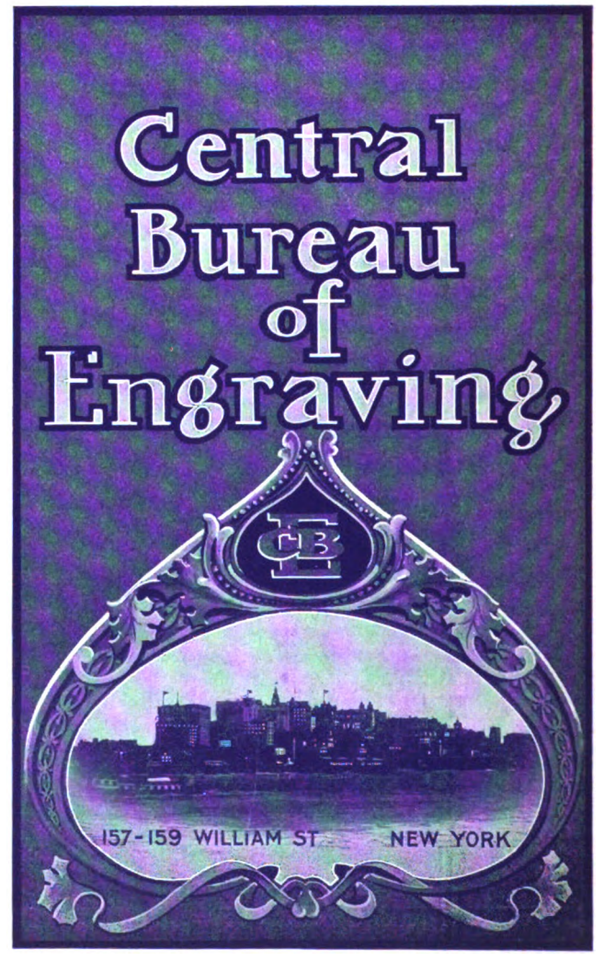
THE "TRACER" TELLS Isn't it worth while to learn your customers' inside business history, not from outside guesses, but from inside records; *the actual experience of those who have dealt with them?* To learn those things that determine *character* and *business ability* as well as *financial strength?* The things that make you trust or distrust a man? The things that come up in actual business dealings, but which an outsider cannot know? The "Tracer" tells.

THE "TRACER" TELLS Is he honest? Is he tricky? Is he careful, prudent, shrewd? Has he the qualities of success? Does he cancel orders unjustly? Does he make false claims for deductions? Is his record good or bad? Are his methods good or bad? The "Tracer" tells.

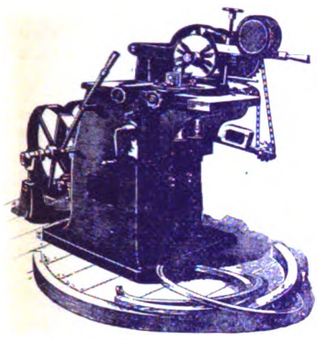
THE "TRACER" TELLS and it is the *only* thing that tells. Every business man leaves a record, widely scattered in the ledgers and in the minds of merchants far apart. That record, if gathered, is the best proof of what a man actually *is*, in his business relations. The "Tracer" gathers these scattered leaves and makes the record complete. The "Tracer" goes to thousands of Wholesale merchants everywhere. From them come a dozen detached bits of experience, concerning one man: together they show his whole business past, and his present condition. Has he ever bought? The "Tracer" tells. Is he getting slow? The "Tracer" tells. Is it time for caution? The "Tracer" tells.

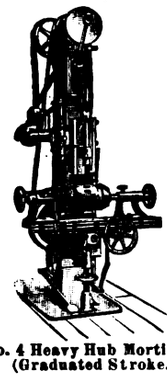
THE "TRACER" TELLS this history to us in fragments. We tell it complete to all who supply the fragments. They supply a few facts; *in return they get a complete history.* In addition to our *unrivaled* "TRACER" reports, this Agency gives all the benefits that any other Mercantile Agency can possibly furnish, including a Reference Book of Credits, semi-annually, January and July issues. Don't subscribe to any Agency until after you have first examined into this *new and improved* system. For terms, write—

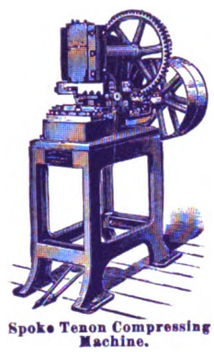
NATIONAL MERCANTILE AGENCY,
SUCCESSORS TO
BALY'S "BLUE BOOK" AND THE BANKERS' COMMERCIAL LEAGUE.
NEW YORK CITY.

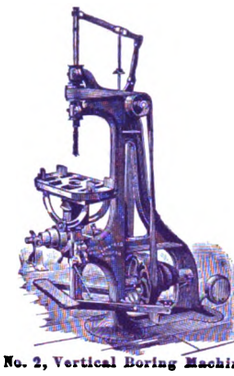


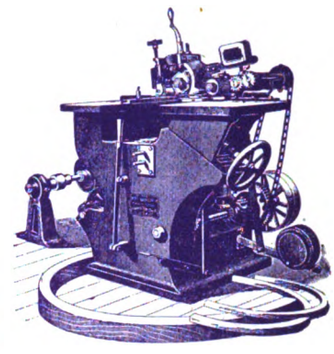
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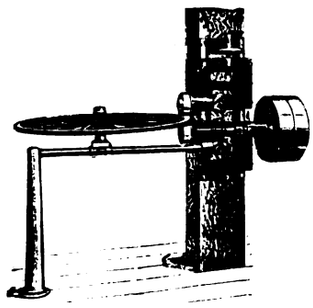

Heavy Two-Side Rim Planer No. 383


No. 4 Heavy Hub Mortiser. (Graduated Stroke.)

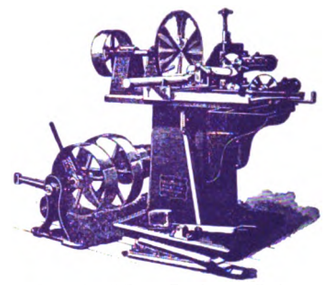

Spoke Tenon Compressing Machine.


No. 2, Vertical Boring Machine.


Heavy Two-Side Rim Planer No. 384

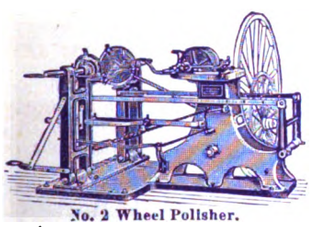

IMPROVED TIRE TRUEING MACHINE No. 314.

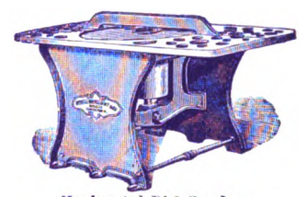
IMPROVED WOOD WORKING MACHINERY

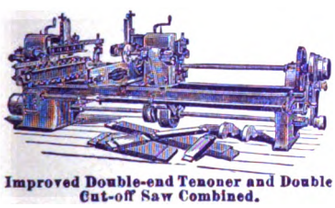

Spoke Cutoff Tenon Trueing and Facing Machine No. 257.

The Bentel & Margedant Co.

Hamilton, Ohio, U. S. A.


No. 2 Wheel Polisher.

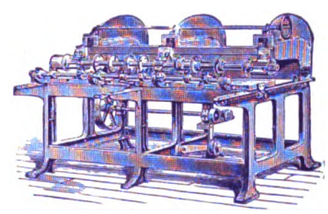

Horizontal Disk Sander.

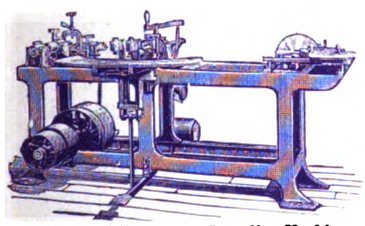

Improved Double-end Tenoner and Double Cut-off Saw Combined.

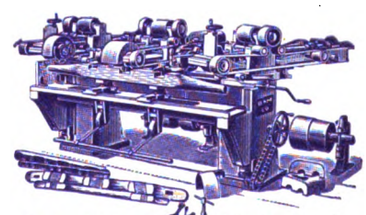
Carriage—
Hub—
Wheel—
Rim—
Spoke—
Wagon—

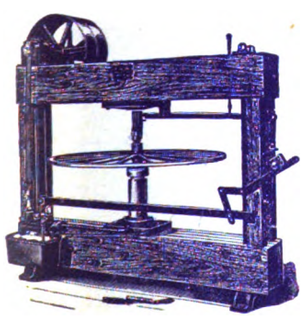

Swing Saw.

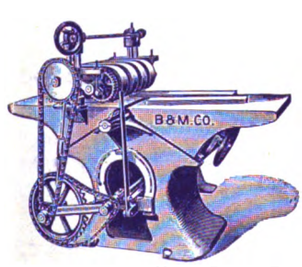
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Gang Grooving and Gaining Machine.


Felly Cut-Off, Boring & Doweling Machine.

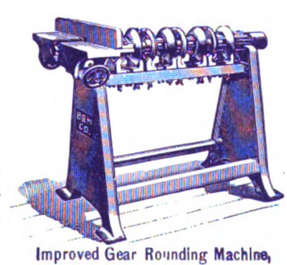

Improved Automatic Axle Gaining Machine.

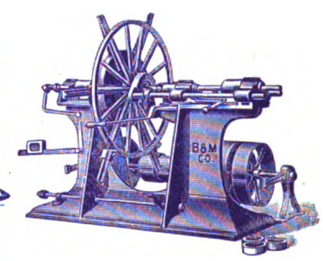

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HAND PLANER, WITH HEAVY POWER-FEED.


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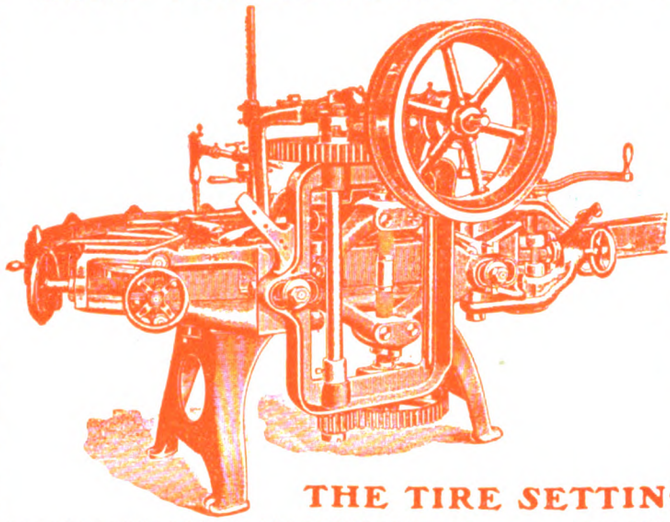

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To Supply the Demands of the

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A power machine with an automatic attachment, and where the operator has absolute control of the machine; can stop or start it instantly at any point in its operation.

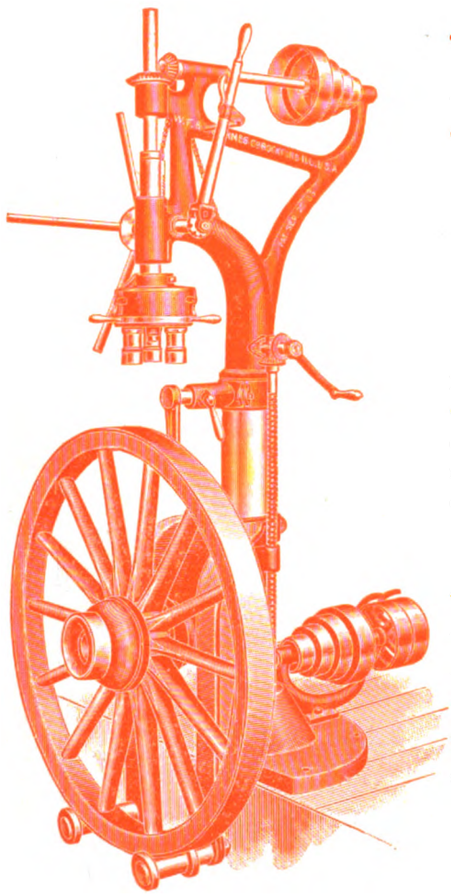
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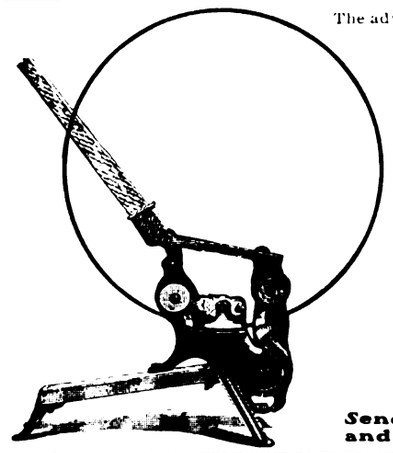
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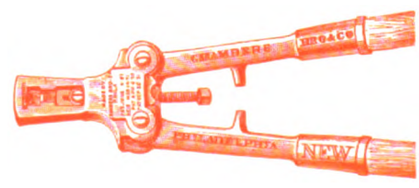
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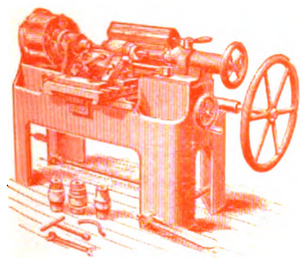
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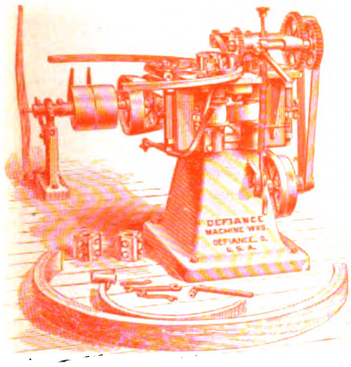
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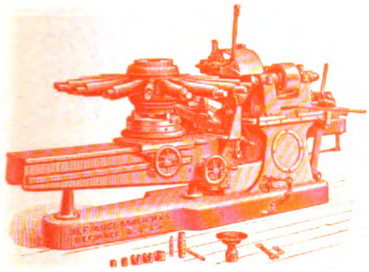
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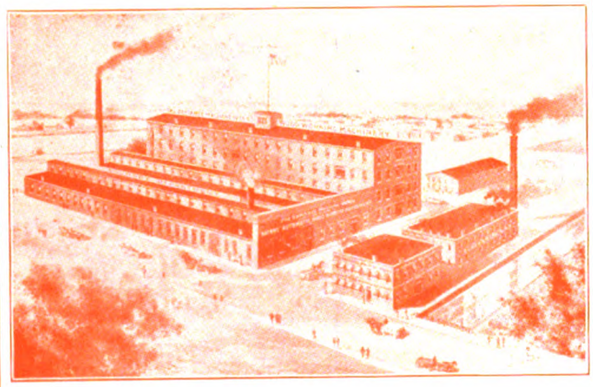


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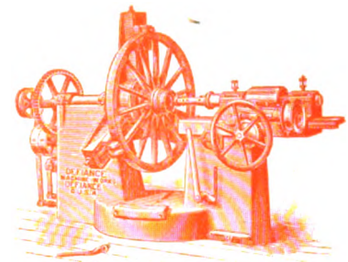
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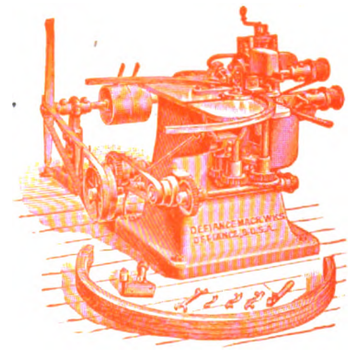
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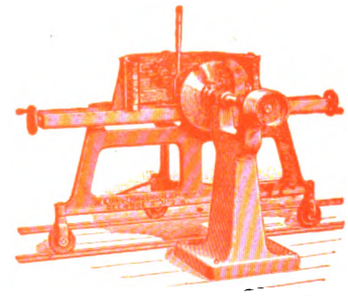
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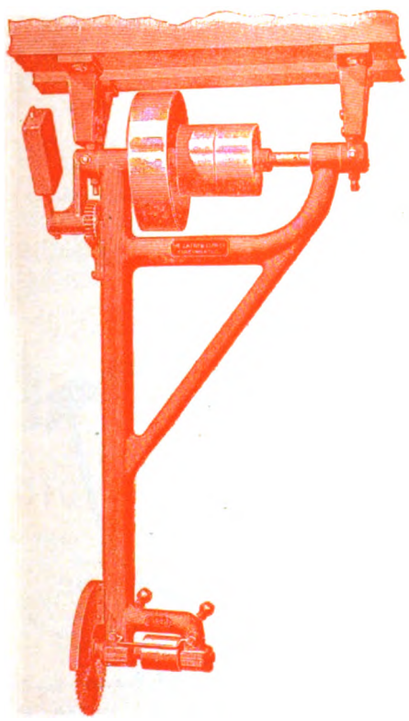
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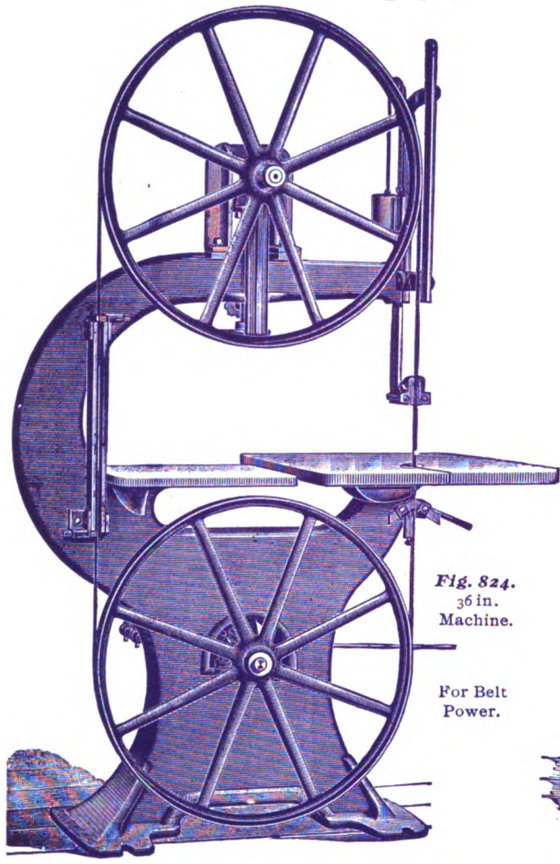


Fig. 824. 36 in. Machine. For Belt Power.

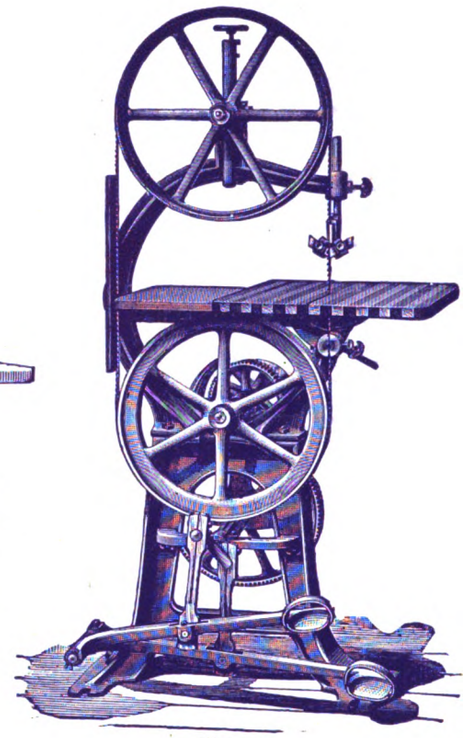


Fig. 721. 20 in. Machine. Combined Foot or Belt Power.

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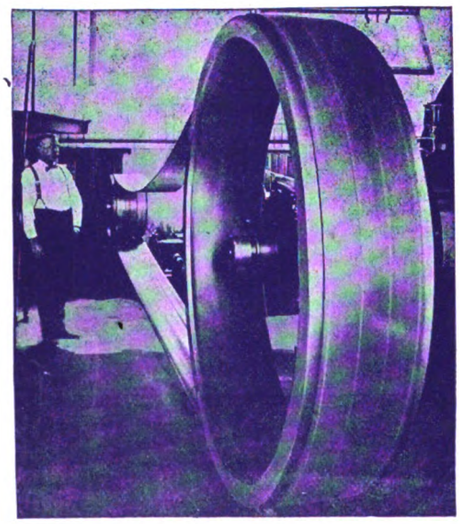
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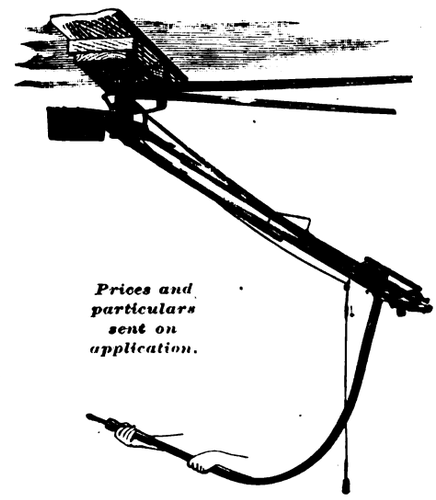
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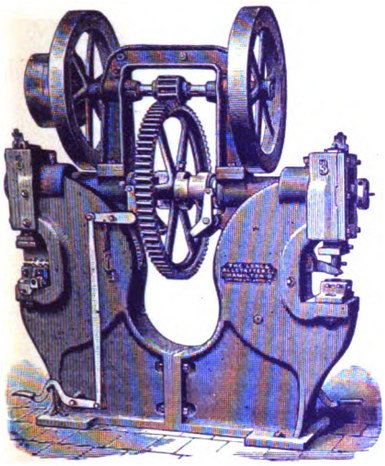
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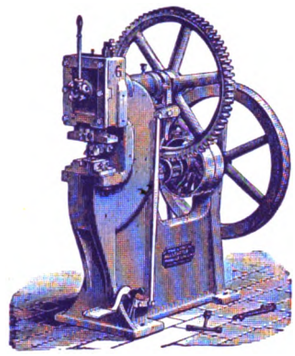
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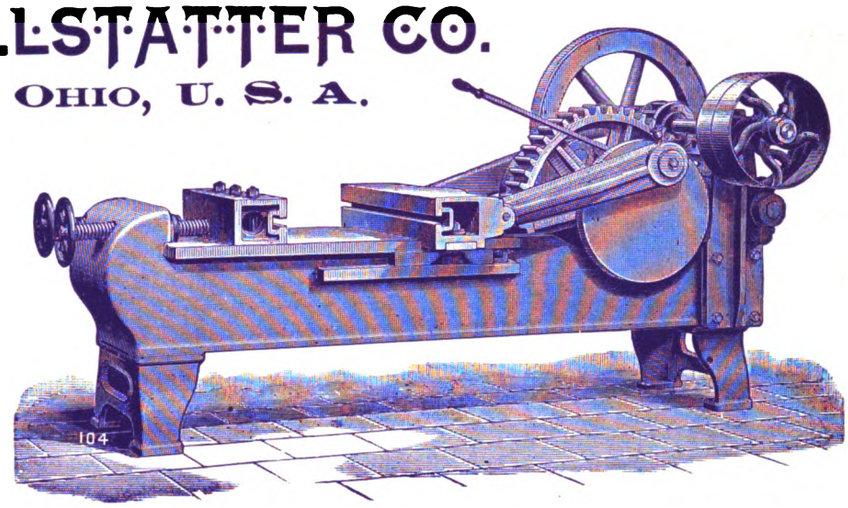
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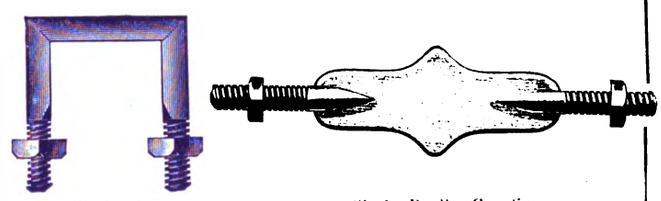
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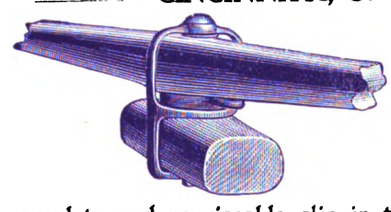
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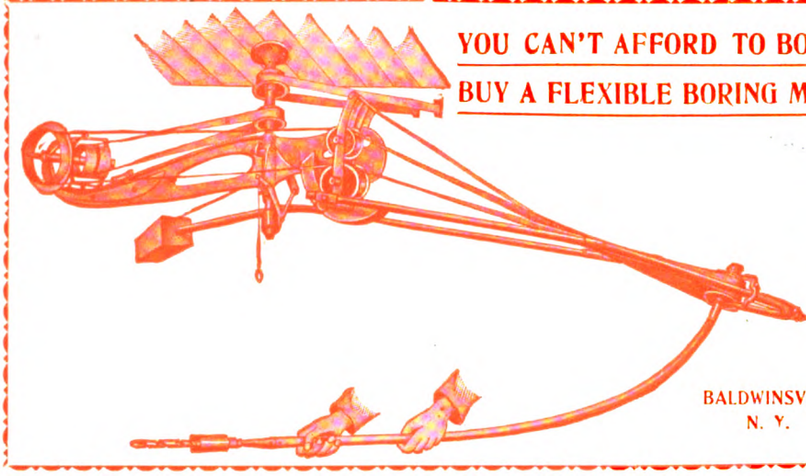
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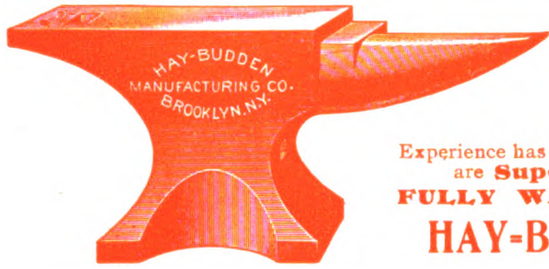
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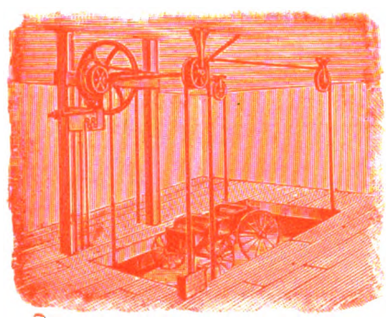
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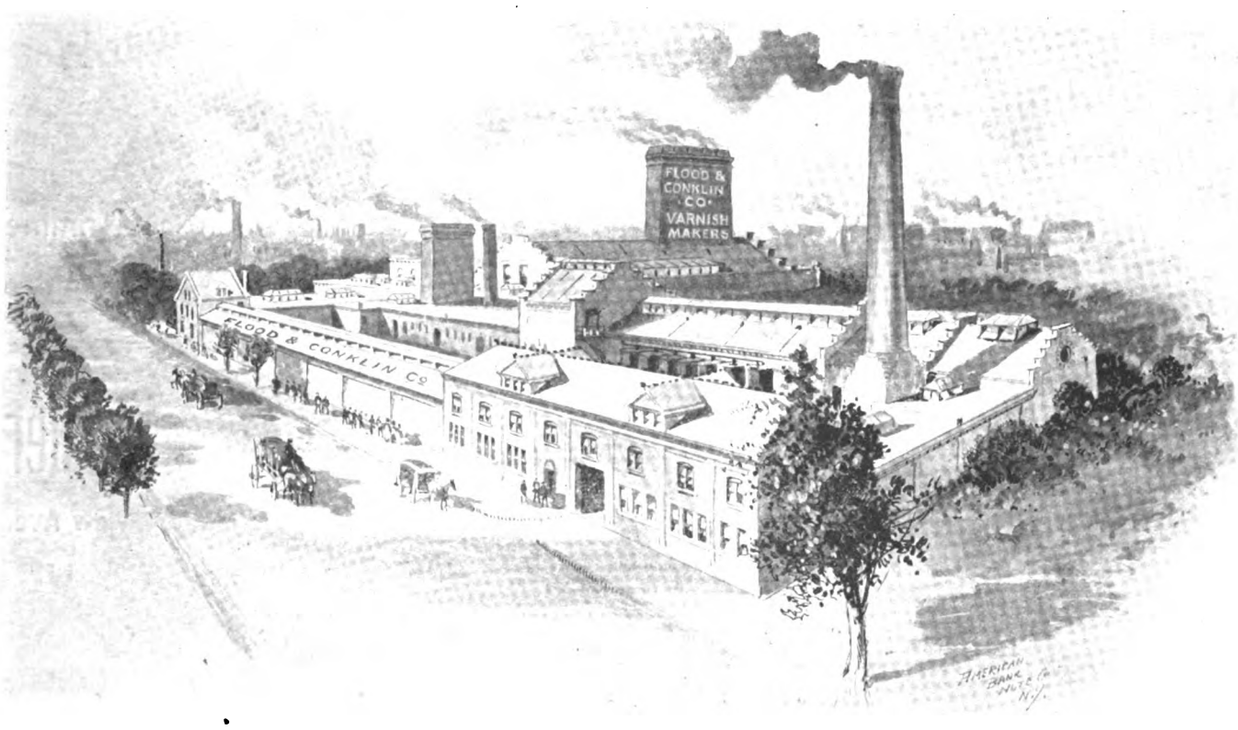
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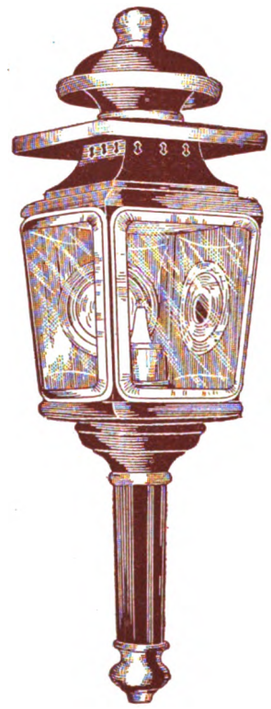
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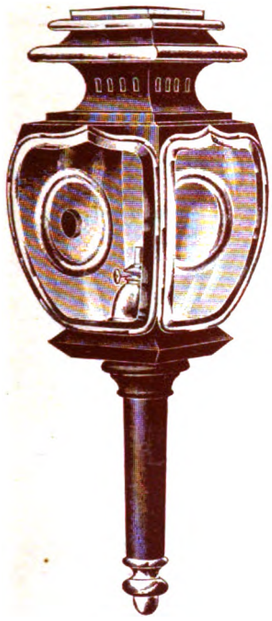
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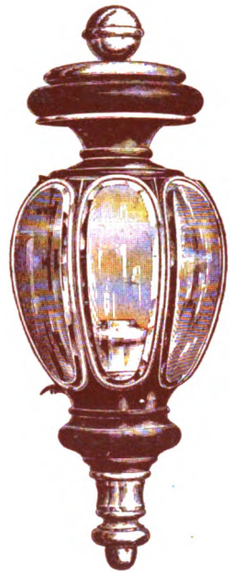
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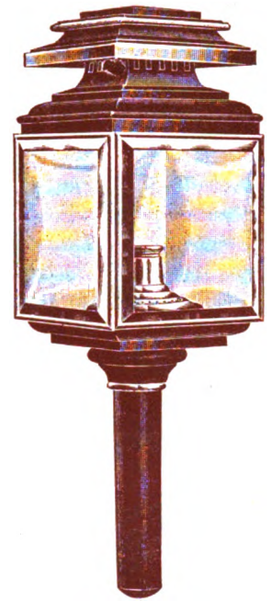
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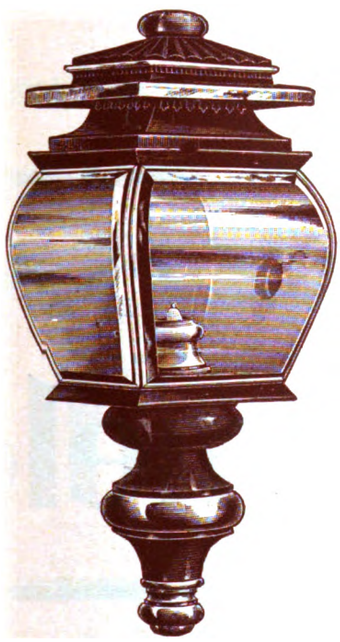


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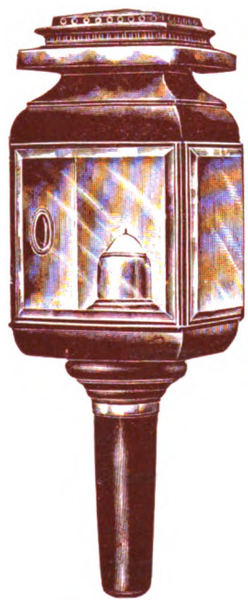


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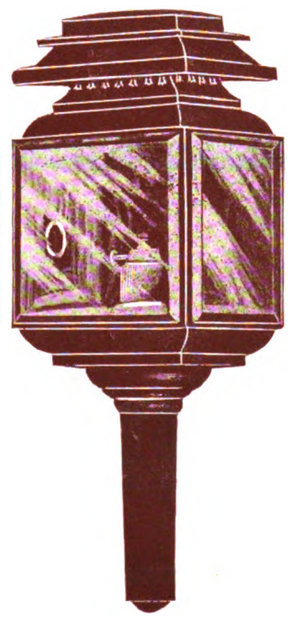
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COLOR SECRETS.

No. 45.—The Delight of the Eye.

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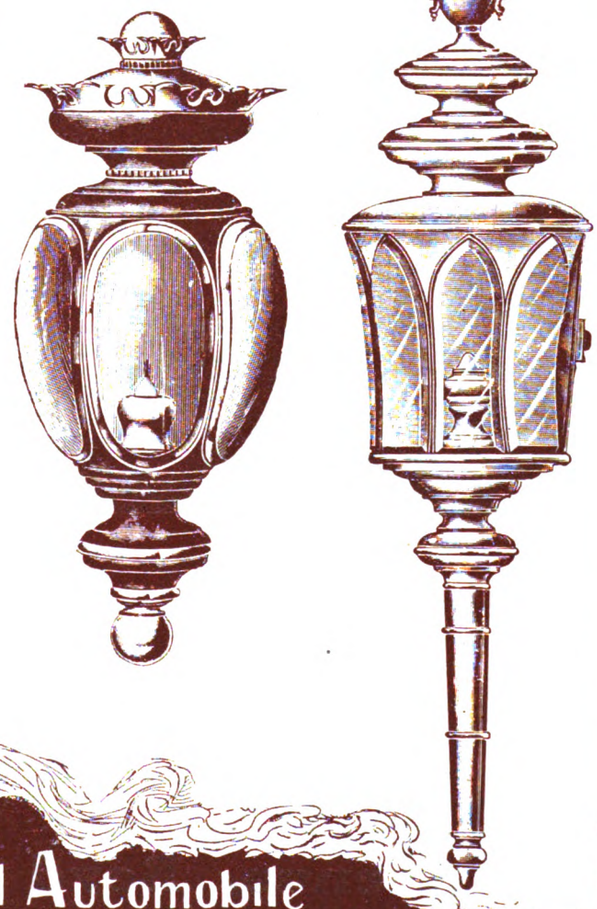
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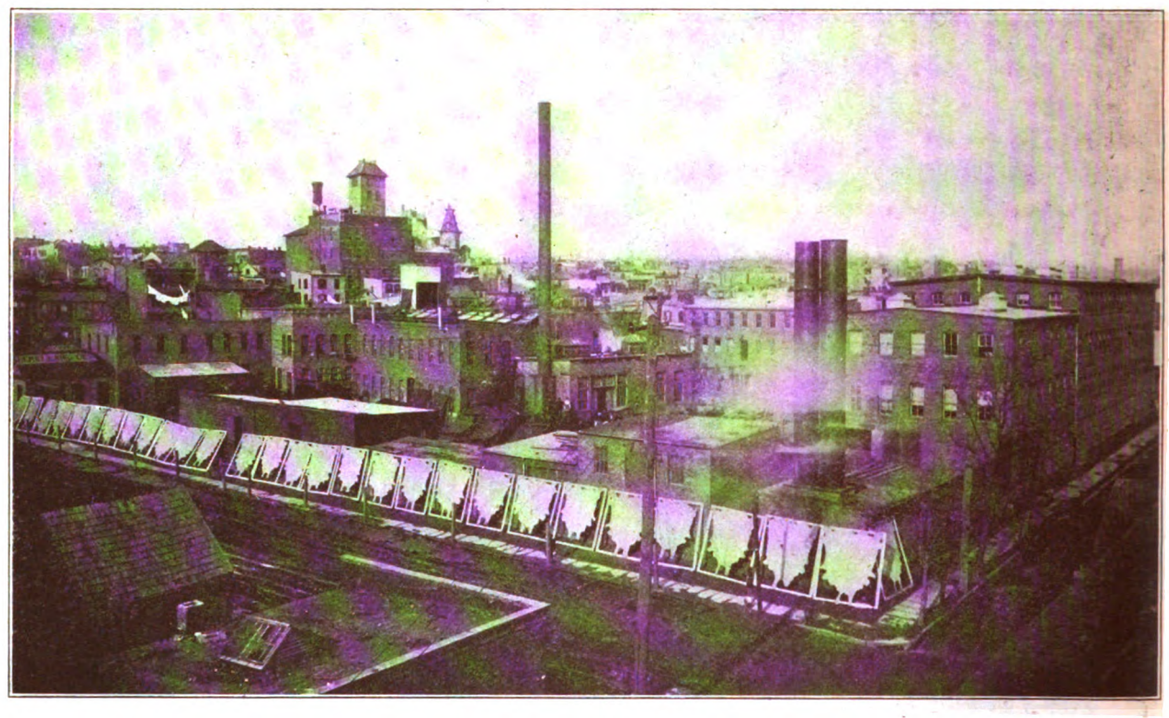
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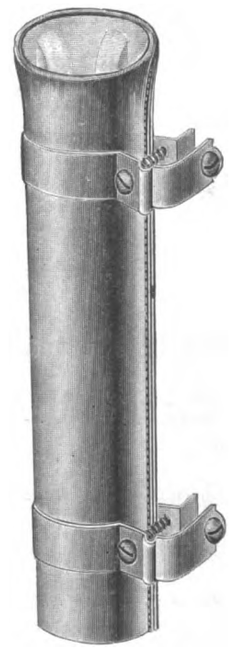
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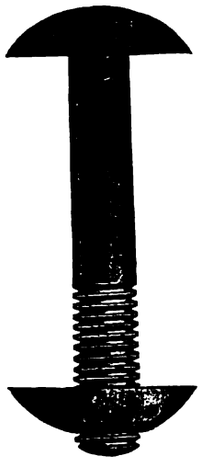


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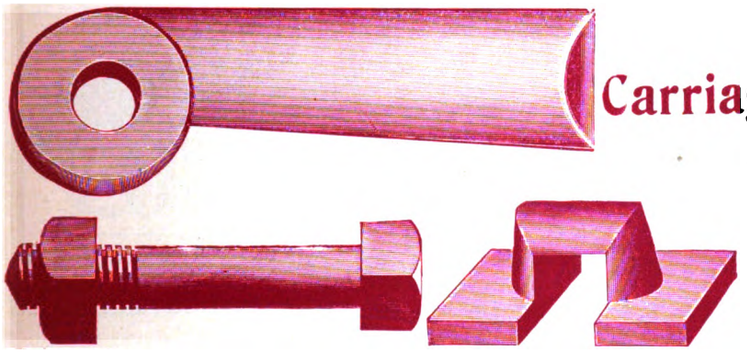
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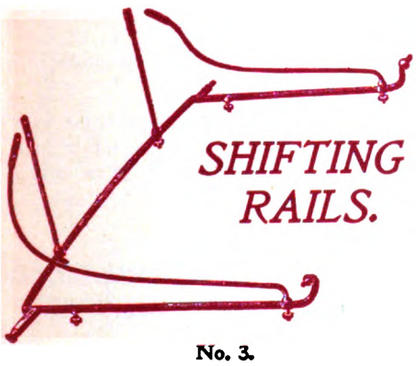


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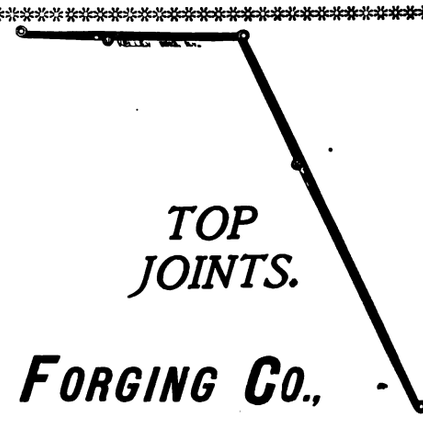


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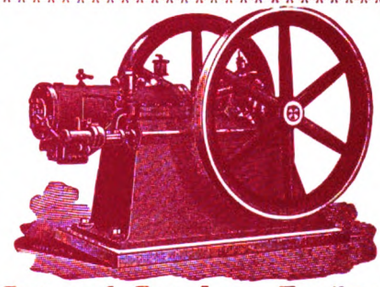


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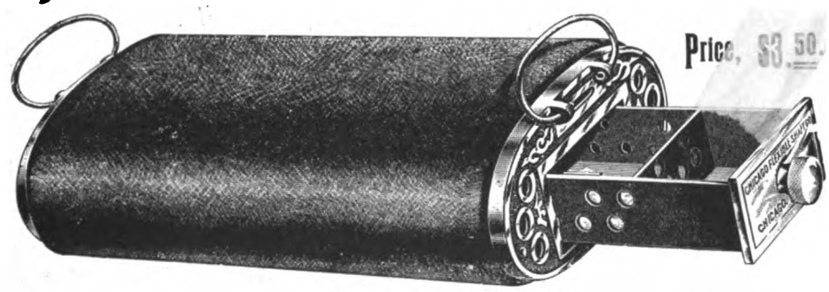
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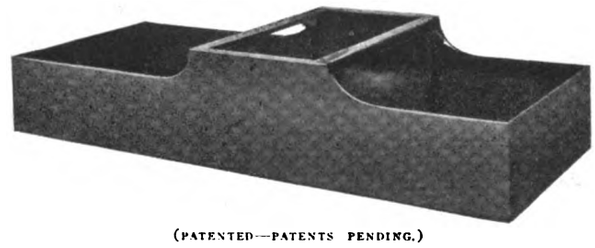
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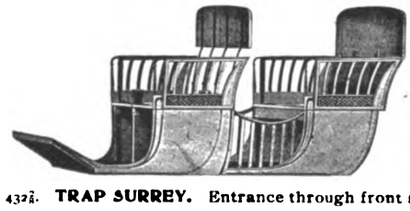
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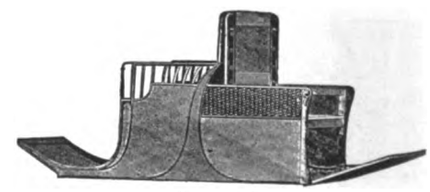
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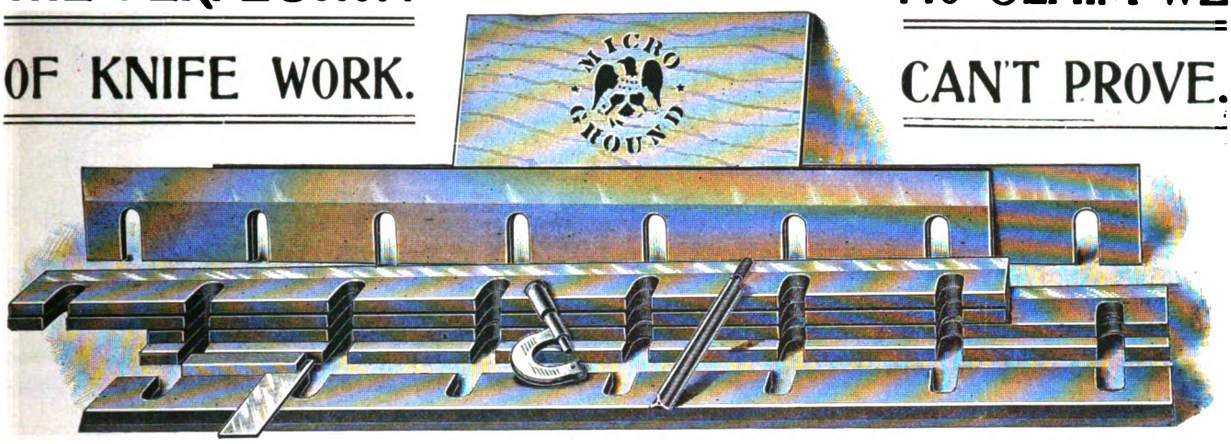
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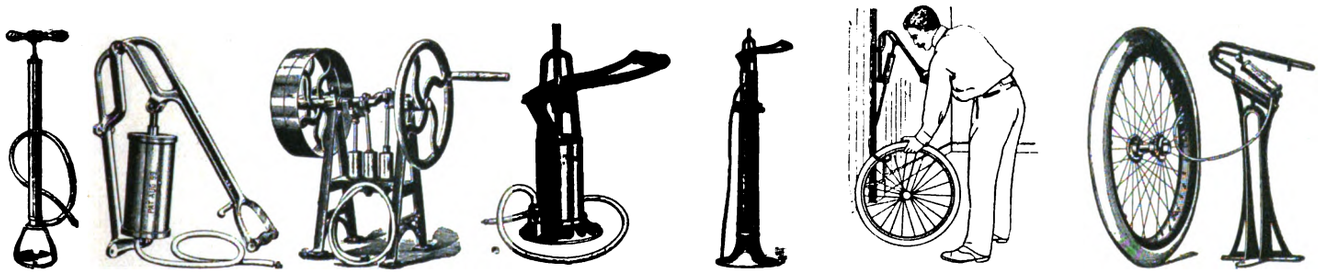
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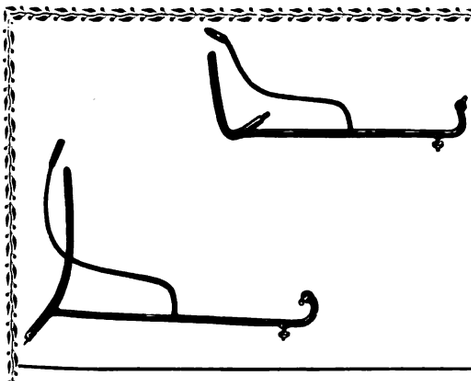
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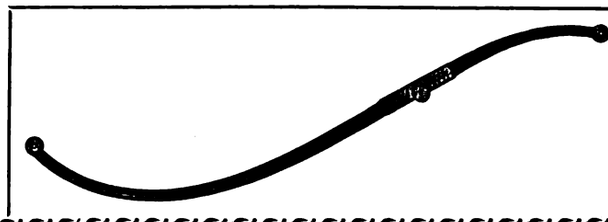
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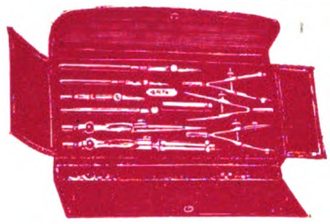
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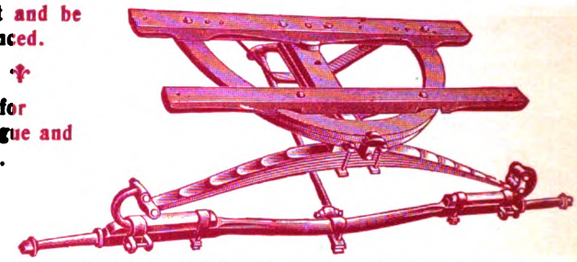
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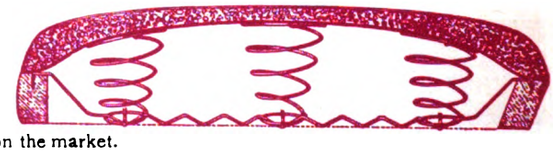
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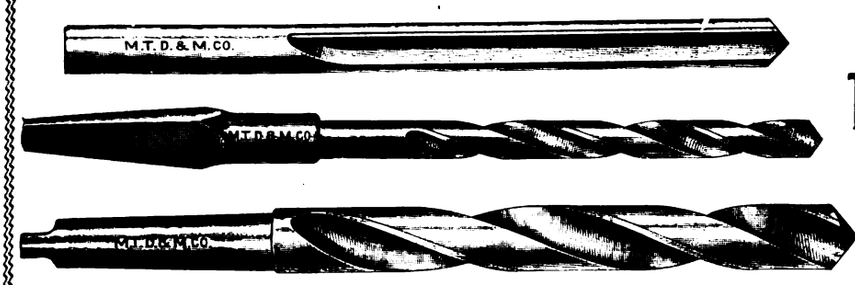
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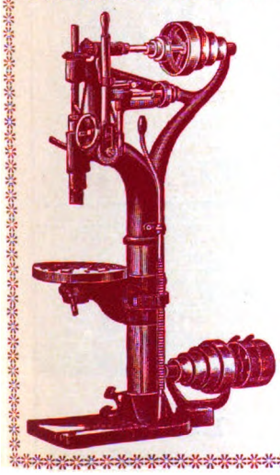
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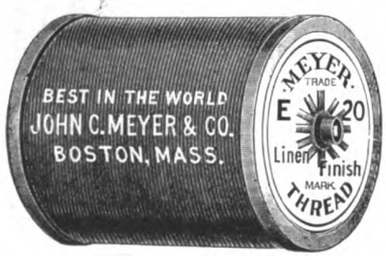
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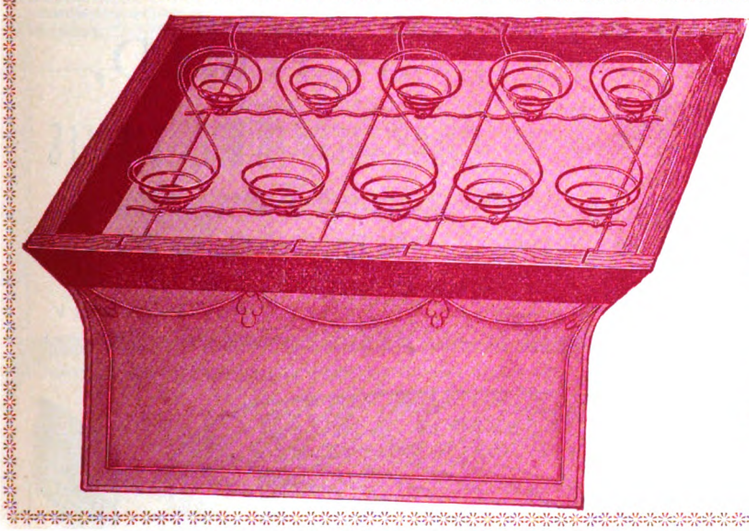
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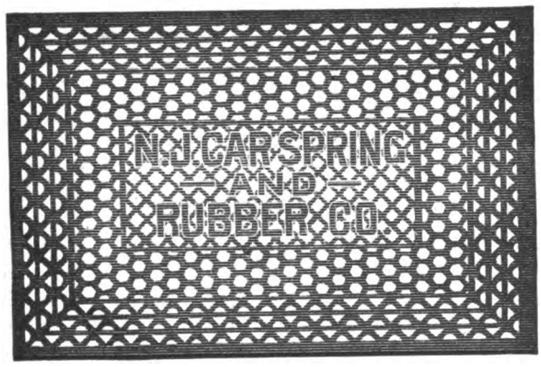
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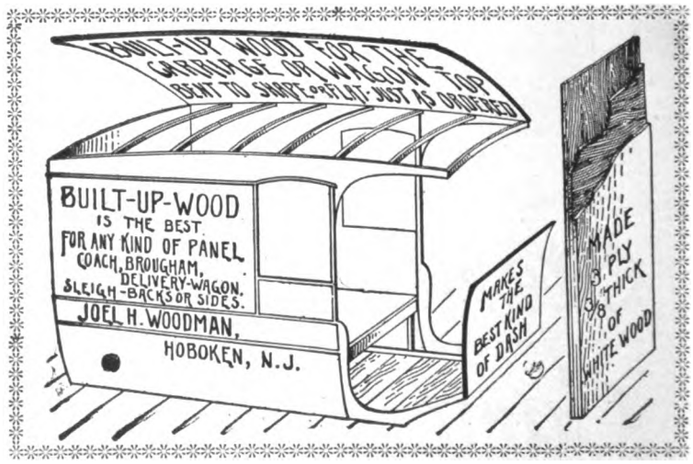
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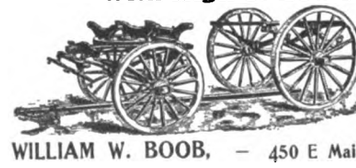
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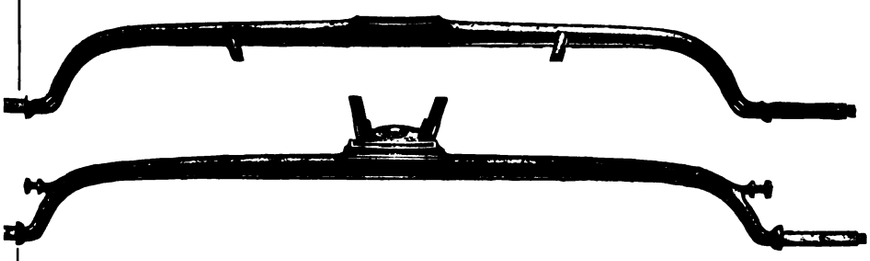
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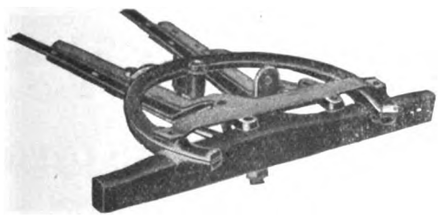
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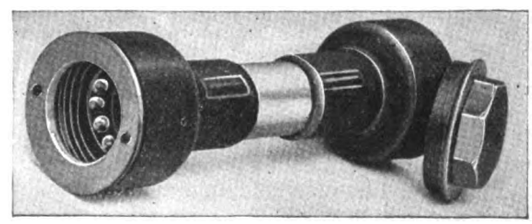
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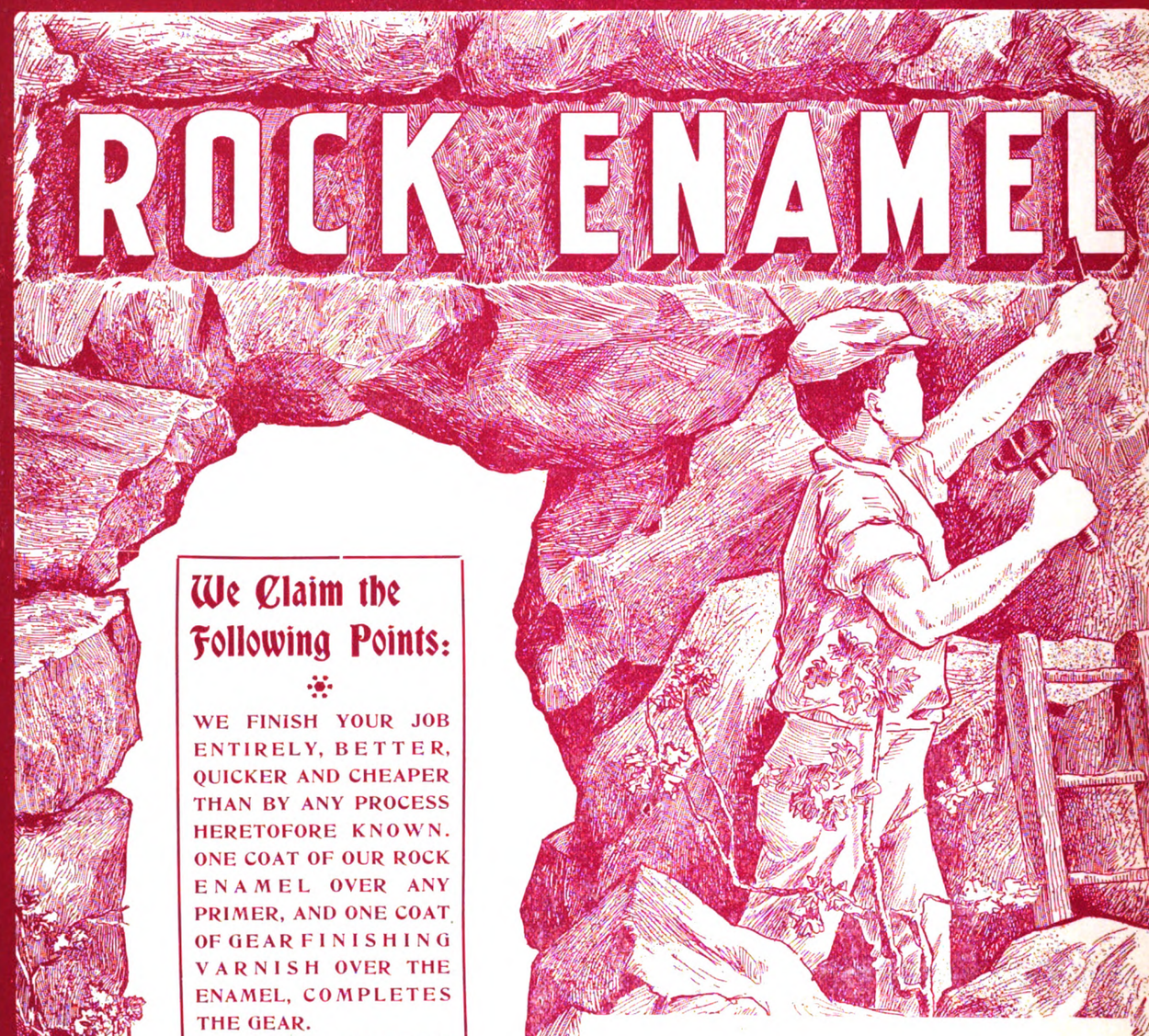
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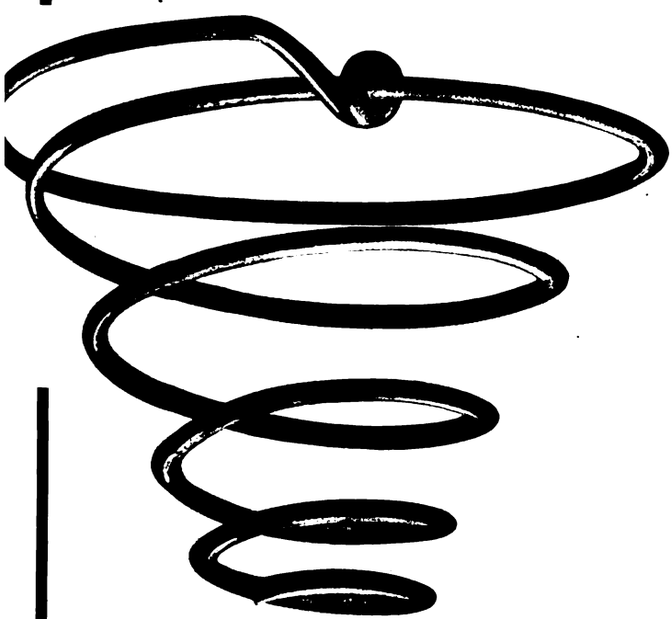
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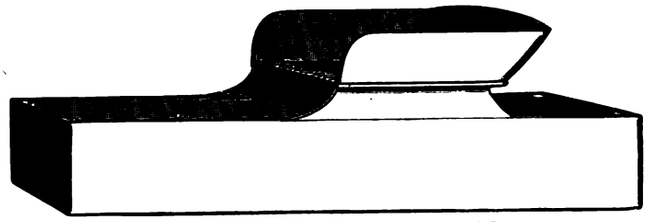
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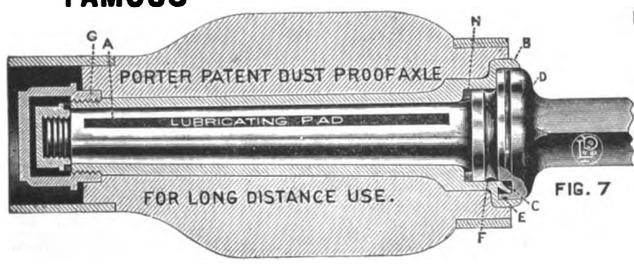


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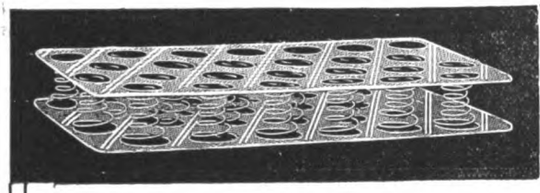
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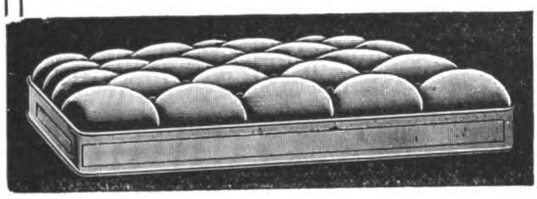
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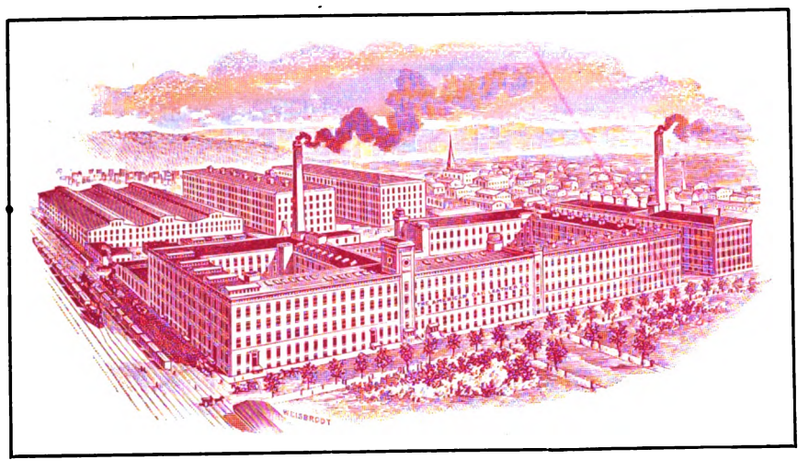
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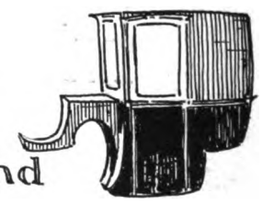
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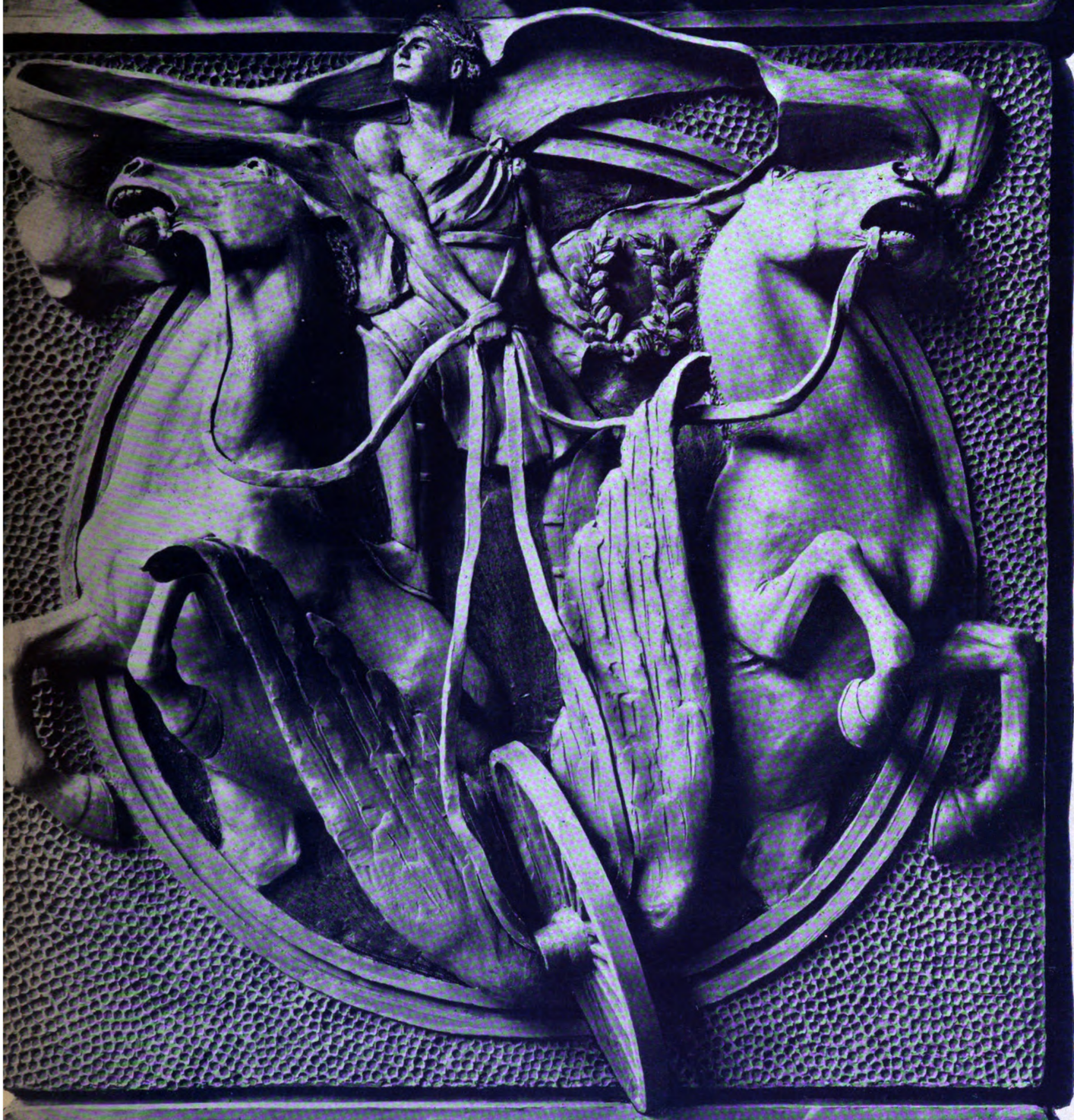
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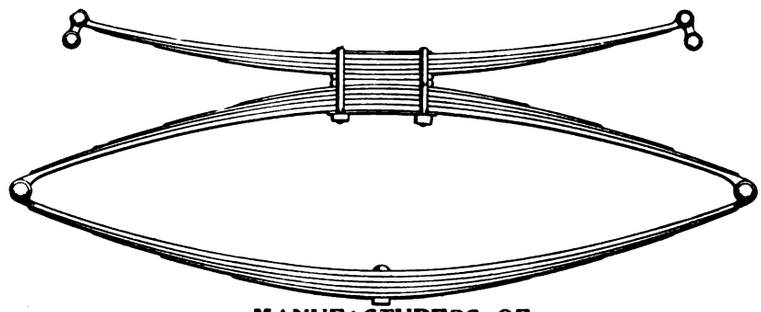
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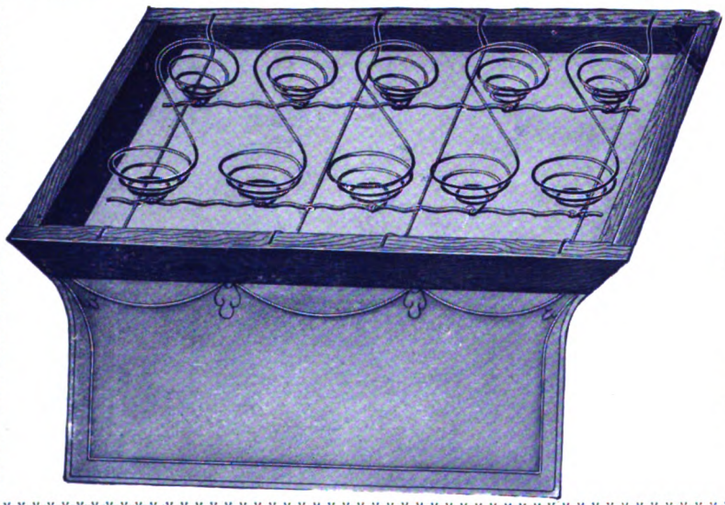
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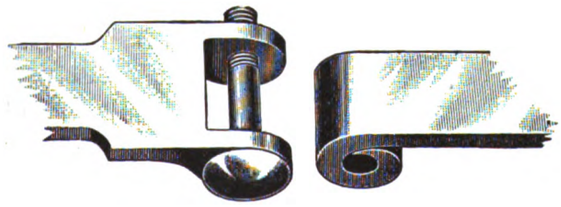
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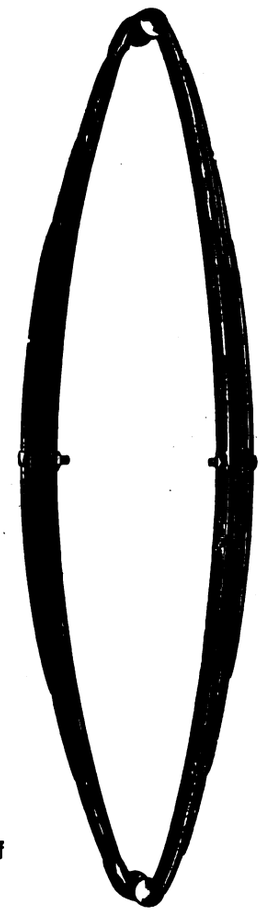
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VARNISHES

Q. Is it important that a Varnish should be absolutely Clear and Transparent?

A. Yes, in the case of a Varnish supposed to be of high grade. It is then an indication that the requisite time has been given for the Varnish to become fully ripened; that is, for the valuable constituents to become thoroughly combined, and for any foreign or insoluble matter to settle out. This is particularly important in the case of a Varnish made of hard, fossil gum, for the reason that not only a longer time is required to reach the point of perfect assimilation of the ingredients, but there are more insoluble impurities to be deposited than, for instance, with a Varnish made of clear rosin, fresh from the still, simply dissolved in the turpentine of which it was formerly a part, or reduced with benzine, with only enough linseed oil to give some little durability. The latter will be practically Clear and Transparent as soon as made; in fact, such a Varnish is often barrelled for shipment directly out of the melting kettle, while a high grade Varnish must be transferred from the kettle into settling tanks and allowed to remain until virtually clear, when it is filtered through paper in large filter presses into the stock tanks, where it again stands until careful tests show it to be in perfect condition for use; that is, free from all the so-called "Varnish deviltries" which may be attributable to the Varnish itself, and possessing the maximum luster and durability. A high grade Varnish, however, in order to retain its Clearness and Transparency, must be kept at a temperature approximating Summer Heat, or about 75 degrees Fahrenheit, and it sometimes happens that when such a Varnish is shipped a long distance in winter, or is stored by the customer in a cold place, it will become cloudy. If this cloudiness is not very pronounced, the Varnish may be again rendered perfectly Transparent by warming it in the can. A bad case of chill, however, is likely to result, when the Varnish is applied, in a "specky, seedy, or sandy" job. This may even happen, in the case of a very sensitive Finishing Varnish, by using it in a cold room, or merely applying it to a cold surface. Thus it will be seen that Clearness and Transparency are important qualities in a high grade Varnish, but mean little or nothing in low grade goods.

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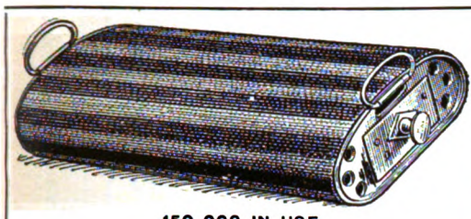
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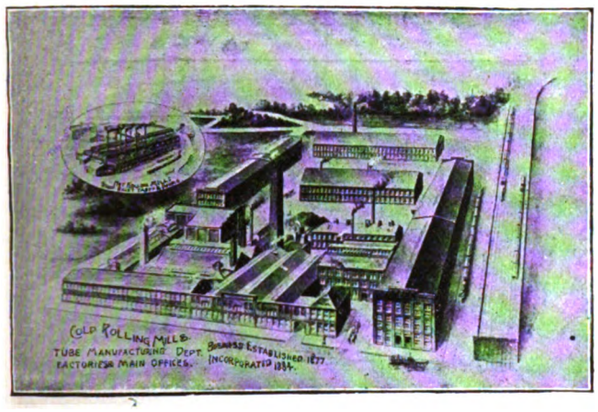
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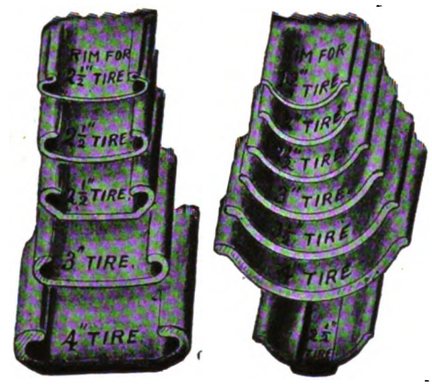


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21 Rue de Lapp.

FACTORIES:
NEW YORK. CHICAGO.

ESTABLISHED
1832.

SWEET Hub Wheels
MAKE FINEST
Bike Wheels

Made with Twelve Spokes...
3¼ Diameter Hubs or Larger

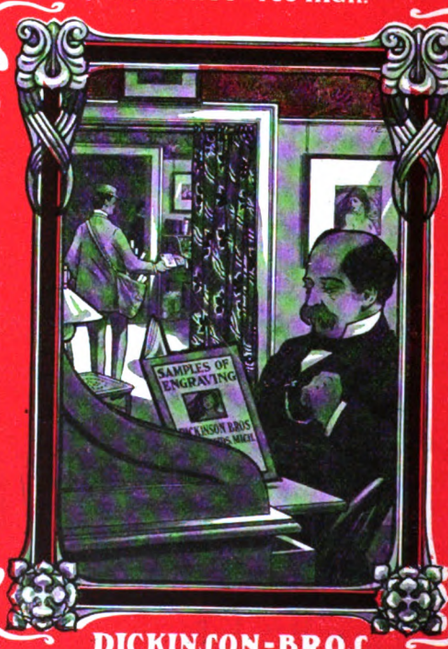
CAN FURNISH THEM FITTED WITH

Crescent
Flat Base
V-Shaped CHANNELS

Write for Prices and order Sample Set.

SHORTSVILLE WHEEL CO.,
SHORTSVILLE, N. Y.

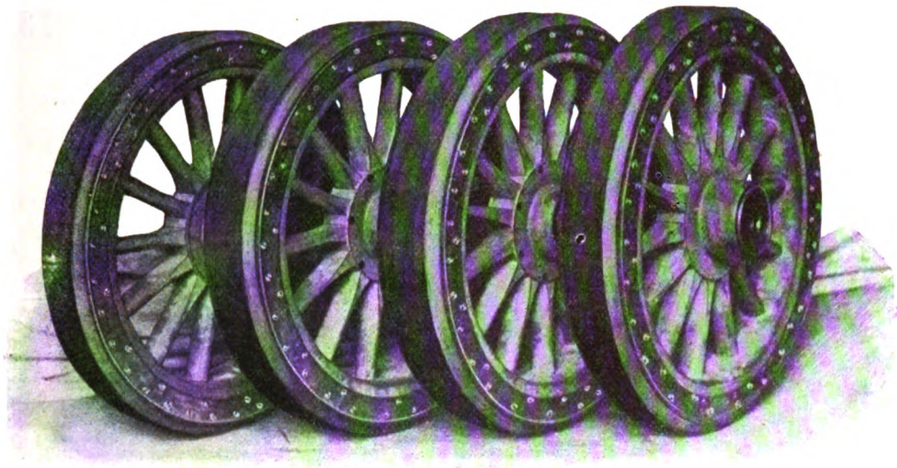
Your Catalogue
IF IT ATTRACTS, RECEIVES THE CUSTOMER'S UNDIVIDED ATTENTION.
VEHICLE CATALOGUES
OUR SPECIALTY
ASK FOR SAMPLES & PRICES
WE'RE NOT TOO HIGH.



DICKINSON-BROS.
ENGRAVERS - PRINTERS
GRAND RAPIDS, MICH.

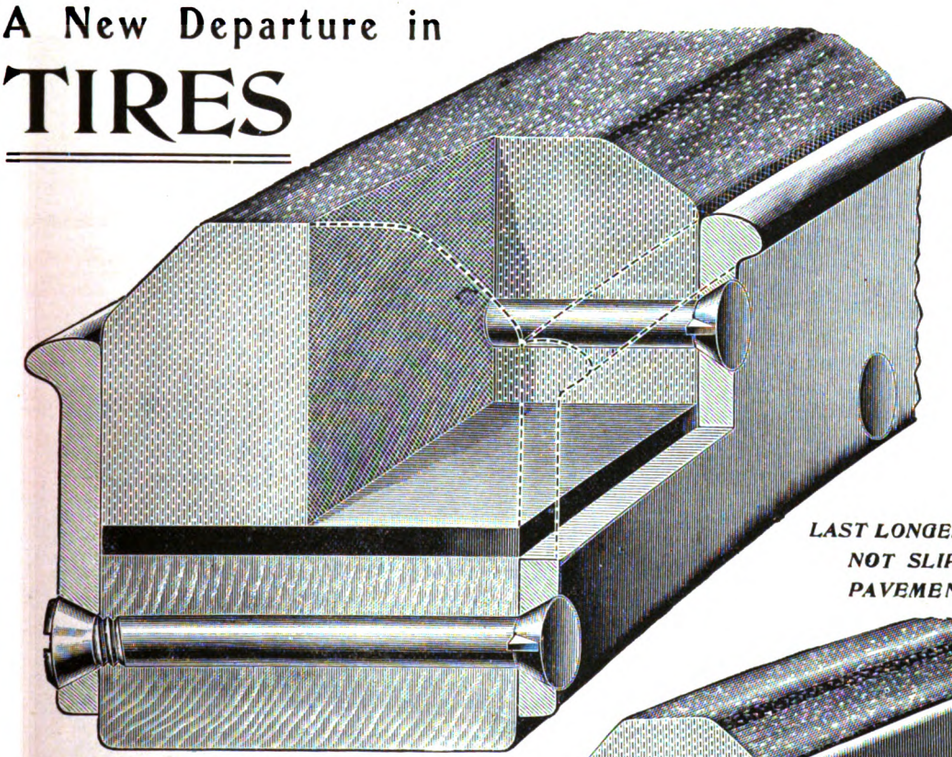
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INDURATED



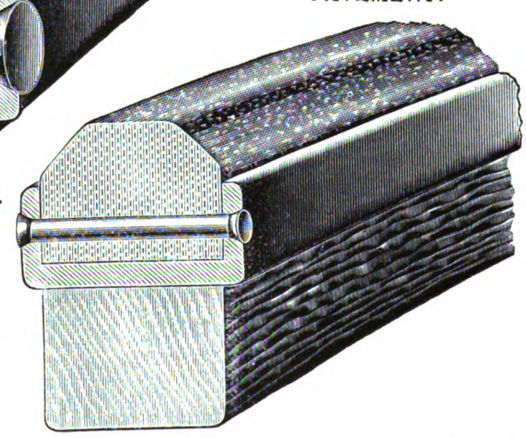
A New Departure in

TIRES



Costs Nothing For Repairs.

LAST LONGER AND DO NOT SLIP ON WET PAVEMENT.



EASY TO PUT ON.
THE BEST TIRE FOR ANY TYPE OF VEHICLE.

INDURATED FABRIC

AUTOMOBILE AND CARRIAGE

TIRES,

Made Under Stevens Patent.

Auto-Dynamic Co.,

140 West 39th Street, - - - NEW YORK CITY.

FABRIC

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FLOOD & CONKLIN CO.'S

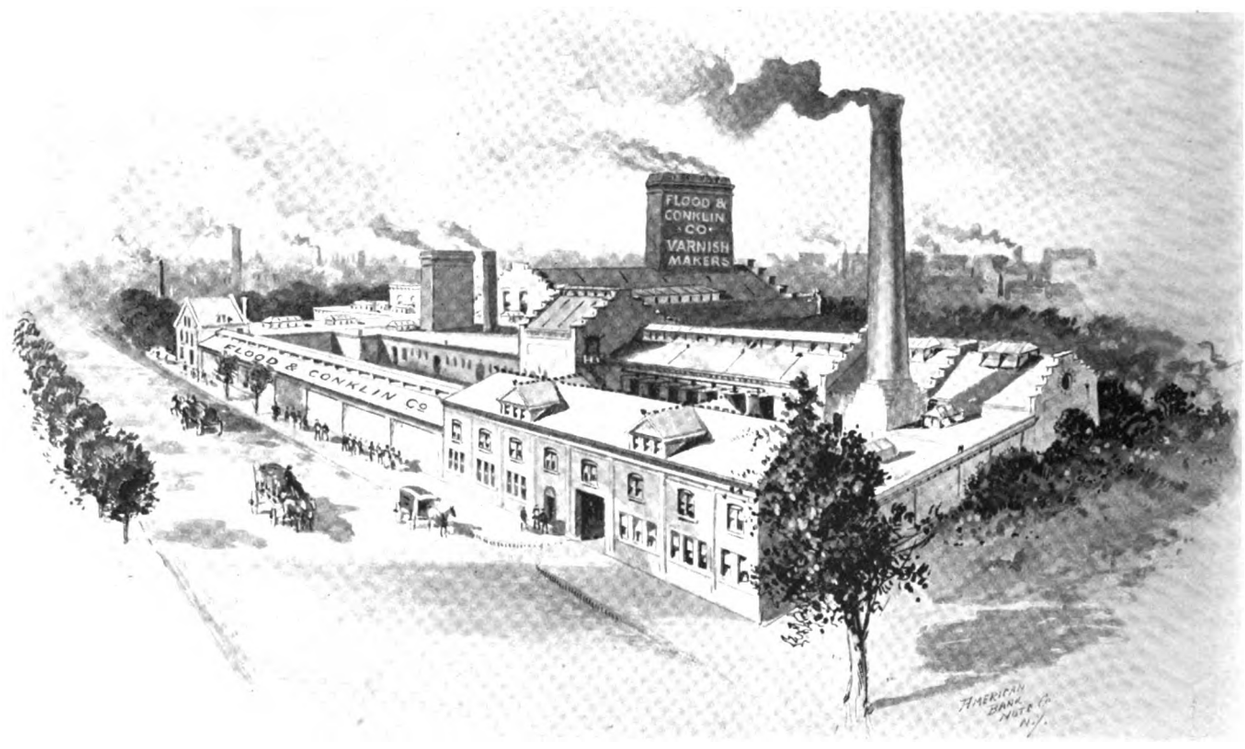
Carriage Varnishes

PERFECT FLOWING

UNEQUALLED FOR EXTREME PALENESS AND FREEDOM AND SAFETY OF WORKING AND EXCELLING IN

DRYING = BRILLIANCY = DURABILITY

WE HAVE ARRIVED—VIA THE PERFECT FACILITIES OF THIS THE MOST MODERN OF VARNISH PLANTS



FLOOD & CONKLIN CO.

... VARNISH MAKERS ...

112-136 Chestnut St. NEWARK, N. J. 49 - 61 Oliver St.

We claim our Roughstuff to be the best made. We would like to have your opinion as to whether or not the claim is a just one, and will be glad to send you a free sample on which to base your verdict.

Please mention "The Hub" when you write.

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W. S. SHULER & THOMAS SPRING CO.,

IT'S OUT OF SIGHT!

THE

Thomas Patent Spring.



No Special Body or Gear necessary.

A set with all connections weighs fifteen pounds.

Saves thirty-five pounds on weight of Gear.

Acts as an equalizer and keeps the body level, as it turns at center in an indestructible vulcanized fibre bearing.

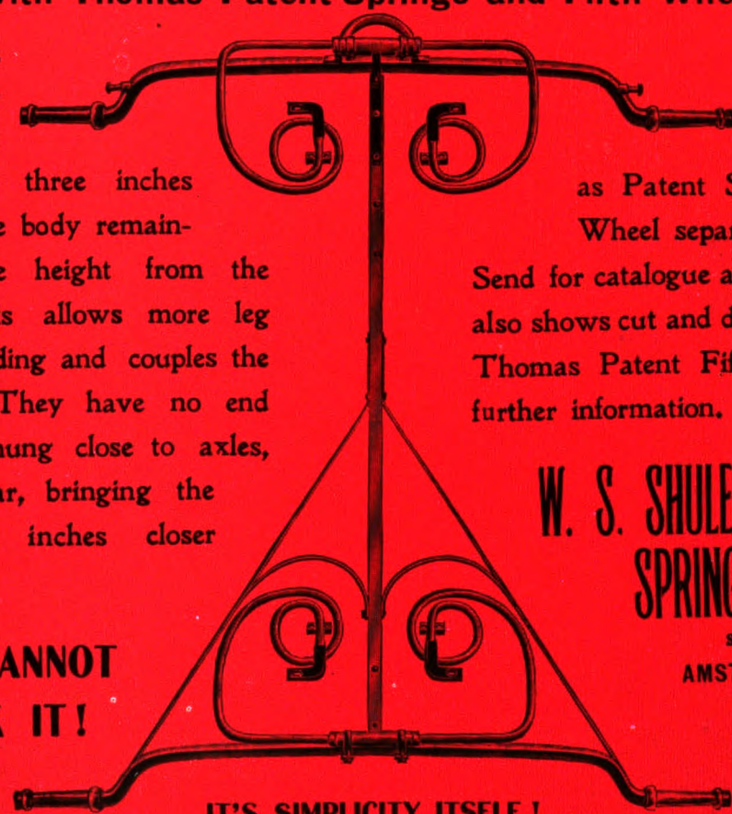
Gives a Soft, Easy Motion. Is Noiseless, Stylish, Elastic and Non-Breakable



THE THOMAS BIKE GEAR

With Thomas Patent Springs and Fifth Wheel.

The Thomas Patent Spring allows the front axle to have three inches higher arch, the body remaining the same height from the ground. This allows more leg room for speeding and couples the horse close. They have no end pitch. Are hung close to axles, front and rear, bringing the wheels three inches closer together.



We furnish this Gear as shown. Also the Thomas Patent Springs or Fifth Wheel separate.

Send for catalogue and prices, which also shows cut and description of the Thomas Patent Fifth Wheel, and further information.

YOU CANNOT BREAK IT!

W. S. SHULER & THOMAS SPRING CO.,

Sole Manufacturers,

AMSTERDAM, N. Y.,

U. S. A.

IT'S SIMPLICITY ITSELF!

AMSTERDAM, N.Y.

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STAN

Batavia "Star Brand" Rubber Tires

Empire Made by Ball Bearing The Chicago Screw Co. Axles

Amesbury Pneumatic Gears

Batavia Carriage and Wagon Wheels

ANTI-FRICTION

THIS COMPANY IS OWNED, CONTROLLED AND OPERATED BY THE CONCERNS WHO MANUFACTURE THE GOODS WE SELL.

S. A. F. E. Co.

50 BROADWAY N. Y.

FACTORIES—
CHICAGO ILL.
BATAVIA N. Y.
WILKES-BARRE PA.
AMESBURY MASS.
BARBERTON, OHIO.

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BARB EQUIPMENT CO.

Beasley Truss Elastic Construction. Tires

Drop Forged Axles, Fifth Wheels, Etc.

Cushion and Pneumatic Tires

Sheldon Axles and Springs

Mr. Carriage Manufacturer and Dealer:-

Our representatives, Messrs. A. C. Farnsworth, W. W. Leavenworth, A. W. Caney and J. S. Beatty are out after your orders. Should they not succeed in reaching you BEFORE, you will find them at the Tri-State Exhibition in Cincinnati--prepared to quote you on the best line of goods money and skill can produce at prices that should secure your business.

We will take pleasure in demonstrating to you at the Exhibition our latest improved method of applying Rubber Tires.

Respectfully,

S. A-F. E. Co.

Address all communications to S.A-F.E.Co. 50 Broadway, New York.

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LATEST STYLES IN LAMPS

We know that you are progressive and will therefore entertain a proposition to save money.

We are ready to make you such a one on your requirements of carriage lamps for next season or any other season.

Briefly stated, our proposition is to furnish you better, more attractive lamps, for less money than you can obtain elsewhere. We will be at the Cincinnati Exposition prepared to demonstrate this proposition. We will not only demonstrate this proposition then, but at any time and any place that will suit your convenience.

Yours truly,
RICHMOND MFG. CO.

RICHMOND MFG. CO.
RICHMOND, IND.

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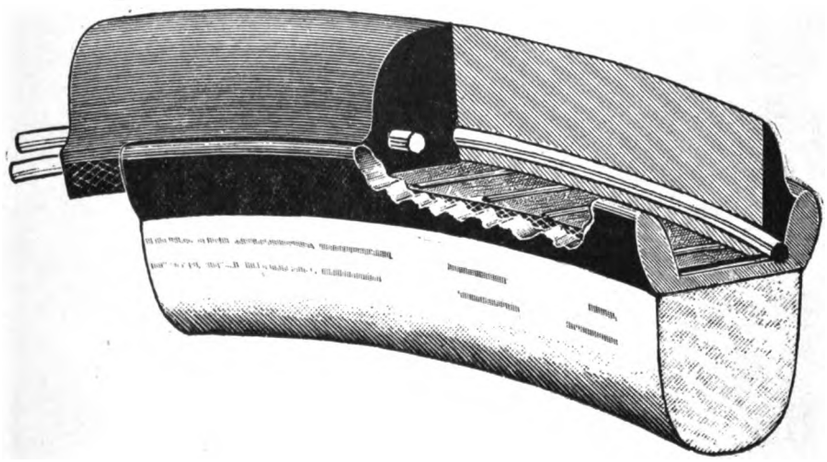
"WEMAKA"

PERFECT VEHICLE TIRE

Perfection in Tire Construction.

Wise Buyers
Buy Cross Wire Tires!

PERFECTION IN TIRE CONSTRUCTION



CROSS WIRES are to a tire what a railroad tie is to the rail---a support.

NO EXPERIMENT---one year in service has convinced the user, manufacturer, our competitors and ourselves that it is all we claim for it.

Fifty years we have been compounders and vulcanizers of Rubber, which insures the buyer that our Rubber is right, and made to withstand wear.

N. J. CAR SPRING & RUBBER CO.,

JERSEY CITY, N. J.

Please mention "The Hub" when you write.

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DIAMOND SOLID TIRES.

Advantages.

Splendid Facilities.
Scientific Compounding.
Economical Production.
Up to date Methods.

Results.

Reliable Tires.
High Grade Rubber.
Minimum Prices.
Satisfied Customers.

"Won Their Way the Result of Merit."





POLICY.

Manufacturers
Business
Exclusively

D TRADE MARK D

We-Ask-
No-Favors
Beyond-a-
Comparison-of
Quality and Prices.





EXHIBITORS.

The Cincinnati Conventions, October 20 to 26 and November 18 to 23.

We cordially invite you to call at our Exhibit. Let us demonstrate the merits of Diamond Tires to you. A half hour's talk will be to your interest as well as ours.

Quick Delivery from following Points.

NEW YORK,	1717 Broadway.
CHICAGO,	429-431 Wabash Ave.
BOSTON,	234 Congress St.
PHILADELPHIA,	435 No. Broad St.
DETROIT,	310 Woodward Ave.
BUFFALO,	9 West Seneca St.
DENVER,	1567 Broadway.
SAN FRANCISCO,	8 Beale St.

THE DIAMOND RUBBER CO.

Headquarters, Offices and Works:

AKRON, OHIO, U. S. A.

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UNRIVALLED VARIETY AND VALUE



CALUMET

(The Pipe of Peace and Plenty)

Everything in Tires and Mechanical Rubber Goods for Carriage and Automobile Manufacturers and Dealers.

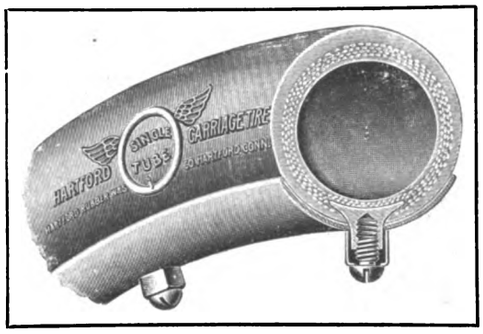
CALUMET TIRE RUBBER CO.

CHICAGO, U. S. A.

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The HARTFORD



SINGLE TUBE TIRE

"Honest Reputation and Recognized Quality."

Every Dealer knows that when a job is fitted with HARTFORD TIRES the maker has given him the best tire procurable in the market.

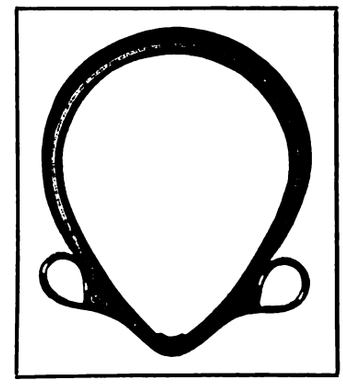
THEY DISTINGUISH THE HIGH GRADE VEHICLE

Manufacturers make no mistake in fitting them. Dealers make no mistake in ordering them. Riders make no mistake in using them.

Manufactured by **THE HARTFORD RUBBER WORKS CO.,** *Hartford, Conn.*

THE MOST SUCCESSFUL TYPES OF PNEUMATIC VEHICLE TIRES

THE JUSTLY POPULAR DUNLOP DETACHABLE TIRE



Consists of two parts, the outer case and the inner tube. It can be detached from the rim instantly and put back as quickly as it was taken off. The act of inflating with the pump fastens it to the rim.

THEY GIVE HONEST ALL ROUND SATISFACTION, BECAUSE THEY ARE WONDERFULLY RESILIENT AND AT THE SAME TIME SIMPLE AND EASY TO MANAGE AND REPAIR.



These Are The Only Tools You'll Need.

Manufactured by **THE HARTFORD RUBBER WORKS CO.,** *Hartford, Conn.*

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WE SHALL FULLY UPHOLD OUR REPUTATION FOR

EXTREMELY HIGH-GRADE QUALITY

IN THE MANUFACTURE OF

HARTFORD SOLID CARRIAGE TIRES.

The excelence of Design, and Construction recommends these tires to all who desire

Reliable and Satisfactory Service







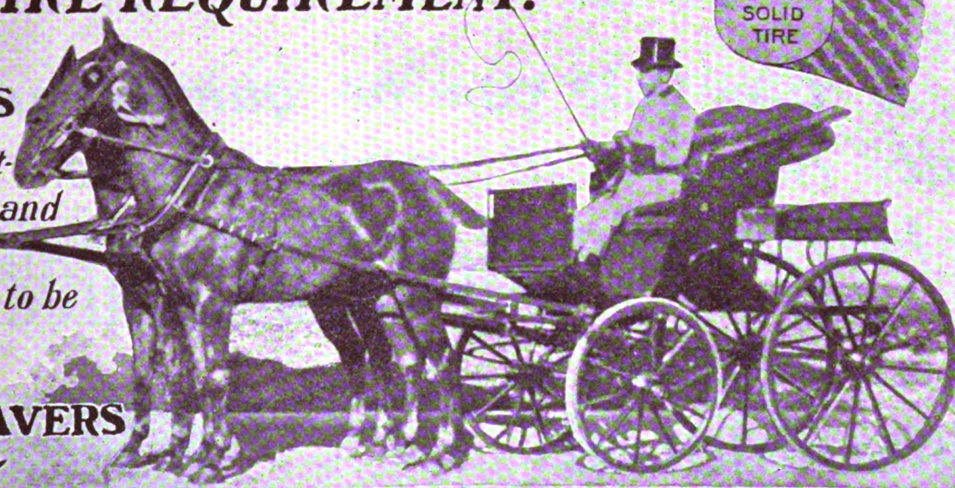
They are a great gain over all others in ease and strength as well as endurance.

THEY FULLY MEET EVERY SOLID TIRE REQUIREMENT.

OUR TIRE MACHINES

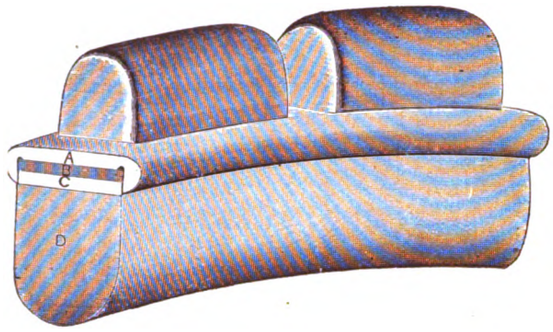
are pre-eminently successful and are universally acknowledged to be

GREAT TIME-SAVERS



THE HARTFORD RUBBER WORKS COMPANY, Hartford, Conn., U.S.A.

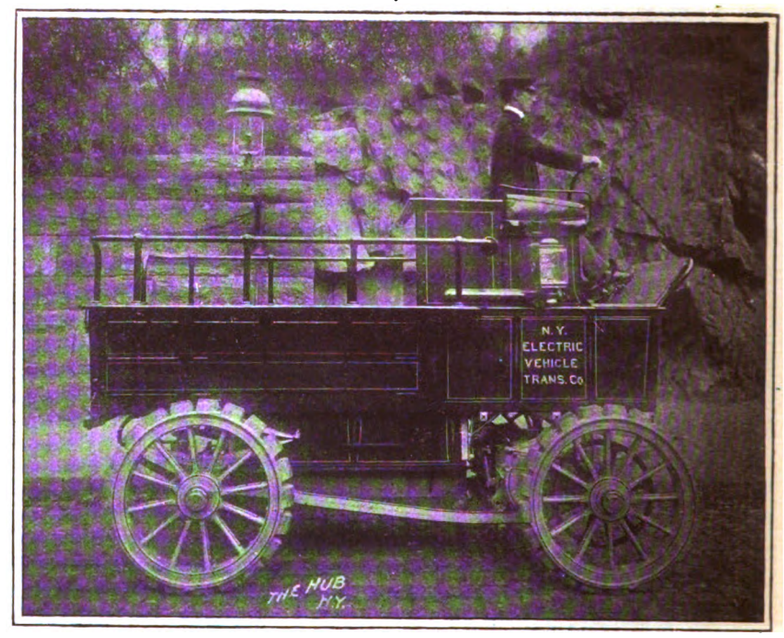
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The Hall Sectional TIRE

A tire which, by actual test, has shown satisfactory mileage and wear on

HEAVY AUTOMOBILES, and TRUCKS

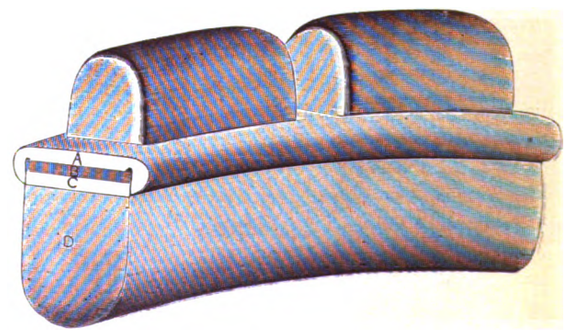


A tire that can be quickly and permanently repaired at small expense. The only tire fully guaranteed for HARD service.

Manufactured by

Consolidated Rubber Tire Co.

40 Wall Street, NEW YORK,
and AKRON, OHIO.



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WILL PILOT

Your product into the high-grade ranks.

It is a mark of merit—the modern equipment for vehicles of quality.

Consolidated Rubber Tire Co.,

New York and Akron, Ohio.

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Delays, discomforts, annoyances eliminated. Long or short journeys on business or pleasure anticipated without anxiety and accomplished without mishap, when equipped with

THE LONG DISTANCE TIRE.

It is the most reliable tire on the market—no other gives such satisfying service. Constructed on a simple, sensible principle. The clock face shows a cross-section of the tire.

Have your dealer or manufacturer of carriage or automobile *put it on your vehicle*—or write to us for it or about it.

NEW YORK BELTING & PACKING CO., Ltd.

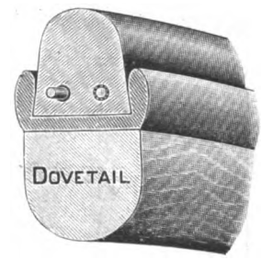
STORES:

NEW YORK,	25 Park Place	CHICAGO,	150 Lake Street
BOSTON,	24 Summer Street	INDIANAPOLIS,	229 South Meridian Street
PHILADELPHIA,	724 Chestnut Street	ST. LOUIS,	411 North Third Street
BALTIMORE,	101 Hopkins Place	SAN FRANCISCO,	509-511 Market Street

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Patent applied for.



As

Private Character

is the foundation of

PUBLIC VIRTUE

so are

HONEST METHODS

in the manufacture of

RUBBER TIRE

the foundation of an

ENVIABLE REPUTATION.

VICTOR TIRES

have it, and justly so.

THE VICTOR RUBBER TIRE CO.,

SPRINGFIELD, OHIO.

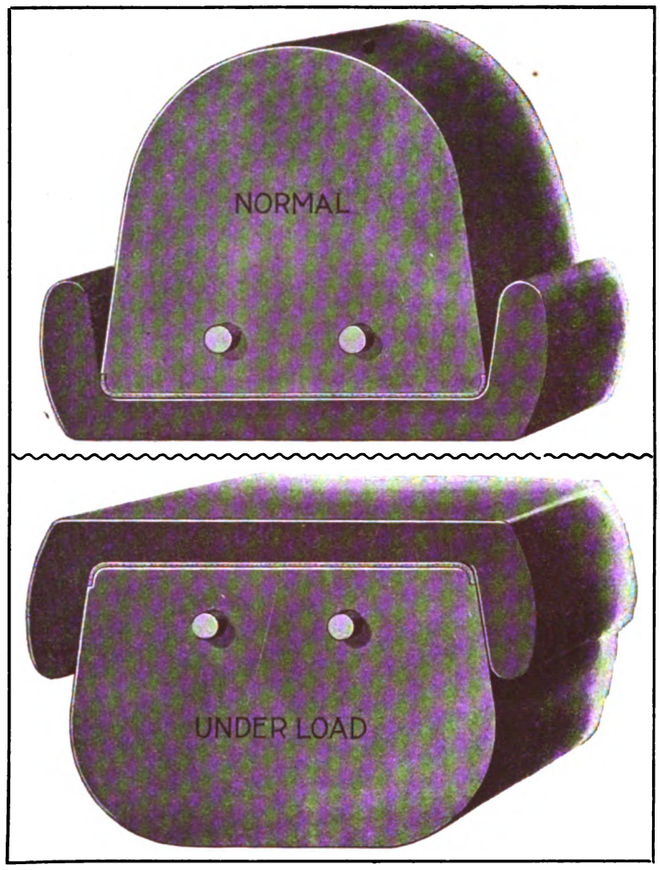
NEW YORK, BOSTON AND BRANCHES.





Patent applied for.

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Carriage and... Automobile Trade

FURNISHED

RUBBER, CHANNELS, WIRE

AND TOOLS FOR APPLYING.

SIZES: 3-4 IN. to 3 IN.

This Tire Fits Into the Standard Channel.

REVERE RUBBER CO.,

BOSTON. NEW YORK. CHICAGO.



FIRESTONE SIDE-WIRE TIRE.



The Standard of Excellence in Rubber Tires.

HAS NO CHEAP IMITATIONS.

Solid. Molded in Coil.

Applied in Normal Condition.



Free from the weaknesses of Inside Wire Tires, with points of strength peculiar to itself.

Will draw trade, hold trade and give satisfaction.

Write for our new booklet and sample of tire before placing your contract for the coming year.

Firestone Tire & Rubber Co.,

AKRON, OHIO.

NEW YORK, 1788 Broadway. *BOSTON, 65 Beverly Street.* *CHICAGO, 550 Wabash Avenue.* *ST. LOUIS, 2212 Olive Street.*

Please mention "The Hub" when you write.

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TIRES

SOLID ✦ CUSHION ✦ PNEUMATIC

The compound we are putting in these tires can not be excelled. It is made from the best material money will buy and as a result we have toughness and resiliency --- the essential points in a vehicle tire.

The manufacturer who wants reliable goods can get them from us.
Our price is right. We solicit your correspondence.

THE INDIA RUBBER CO.

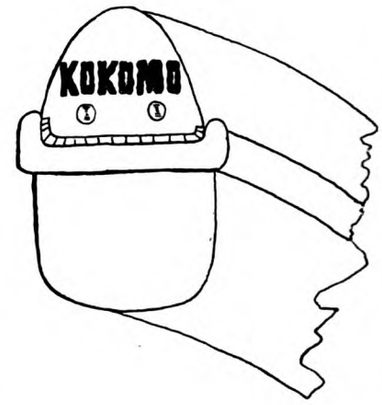
AKRON, OHIO.

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WE STAND READY TO BACK THE QUALITY OF OUR TIRES.





KOKOMO RUBBER CO.
KOKOMO IND.

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SEE

FULLER BUGGY CO.

JACKSON, MICH.

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"WATERLOO SLEIGH POINTERS"

BEST VALUES GOOD STYLES

FINE FINISH-DURABILITY

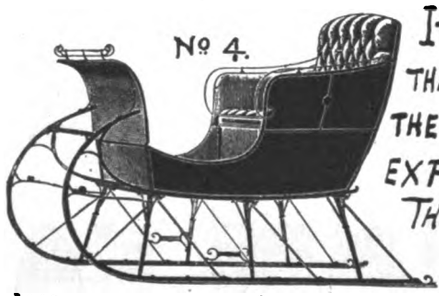
WE ARE OFFERING DISCRIMINATING BUYERS THIS SEASON THE BEST SLEIGH VALUES TO BE FOUND IN THE SLEIGH MARKETS OF THE WORLD.

WE REALIZE THAT THIS IS A SWEEPING STATEMENT, BUT THE CONFIDENCE WE HAVE GAINED BY SELLING OUR SLEIGHS TO THE SAME TRADE YEAR AFTER YEAR FOR NEARLY TWENTY YEARS MAKES US WILLING TO STAND BY THE ABSOLUTE TRUTHFULNESS OF THE SAME WITHOUT ANY QUALIFICATIONS WHATEVER.



WE HAVE ON OUR LIST AS BUYERS OF OUR SLEIGHS A MAJORITY OF THE LEADING DEALERS OF THIS COUNTRY AND THEY TELL US THAT IN THEIR EXPERIENCE A DISSATISFIED USER OF A WATERLOO SLEIGH IS "A VERY RARE BIRD."

IT DOES NOT "HAPPEN SO" THAT OUR SLEIGHS LOOK RIGHT, RIDE RIGHT AND STAY RIGHT.

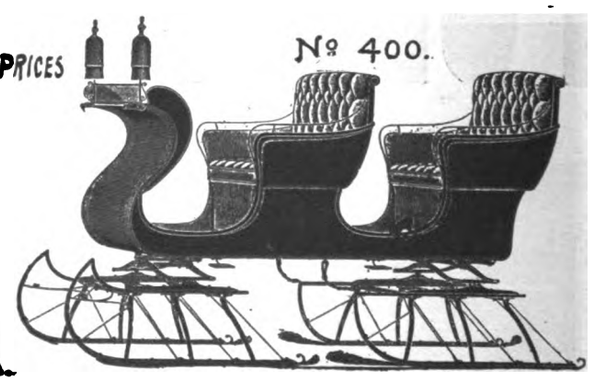


IT IS BECAUSE WE BUILD THEM ON THE OLDFASHIONED PRINCIPLE THAT IT PAYS US TO MAKE THEM RIGHT, COMBINED WITH THE KNOWLEDGE, ACQUIRED BY NEARLY TWENTY YEARS EXPERIENCE, OF HOW TO MAKE THEM RIGHT.

THERE IS NOTHING OLDFASHIONED ABOUT THE SLEIGHS EXCEPT THE OLDFASHIONED HONESTY OF THE MATERIAL AND THE WORKMANSHIP—ASIDE FROM THIS THEY ARE ENTIRELY UP-TO-DATE.

IN THE QUALITIES OF STYLE, FINISH AND PROPORTION THEY STAND FIRST AND IN THE MATTER OF EASY RIDING AND DURABILITY THEY RANK WITH "THE WONDERFUL ONE. HOSS SHAY"

CATALOGUE ON REQUEST AND LOWEST PRICES QUOTED BONA-FIDE DEALERS



WATERLOO WAGON COMPANY LIMITED,

WATERLOO, SENECA CO., N.Y., U.S.A.

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WAGON

WATERLOO

COMPANY LTD.,

OUR TOP COMFORT



NUMBER 4½.

We show above one of the best Top Sleighs built for the trade. Every detail of material, construction, comfort and safety is up to the highest standard of custom sleigh building.

Our line of sleighs embrace all the desirable styles and grades from a reliable medium priced Portland to the best examples of the sleigh builder's art.

Catalogue and price list mailed to dealers, in territory not already assigned, on request.

LATE STYLES

FINE FINISH

SENECA Co.

WATERLOO

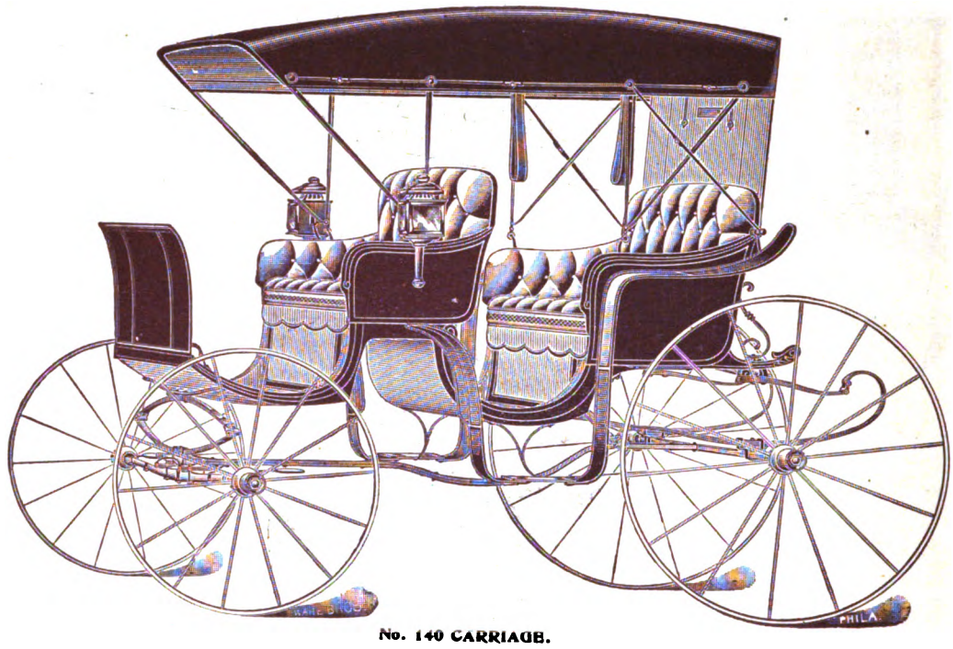
N. Y.

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BLEES-McVICKER CARRIAGE CO.,

Manufacturers of FINE VEHICLES.

STYLE,
QUALITY,
WORKMAN-
SHIP.



No. 140 CARRIAGE.

It Will Pay You to Investigate

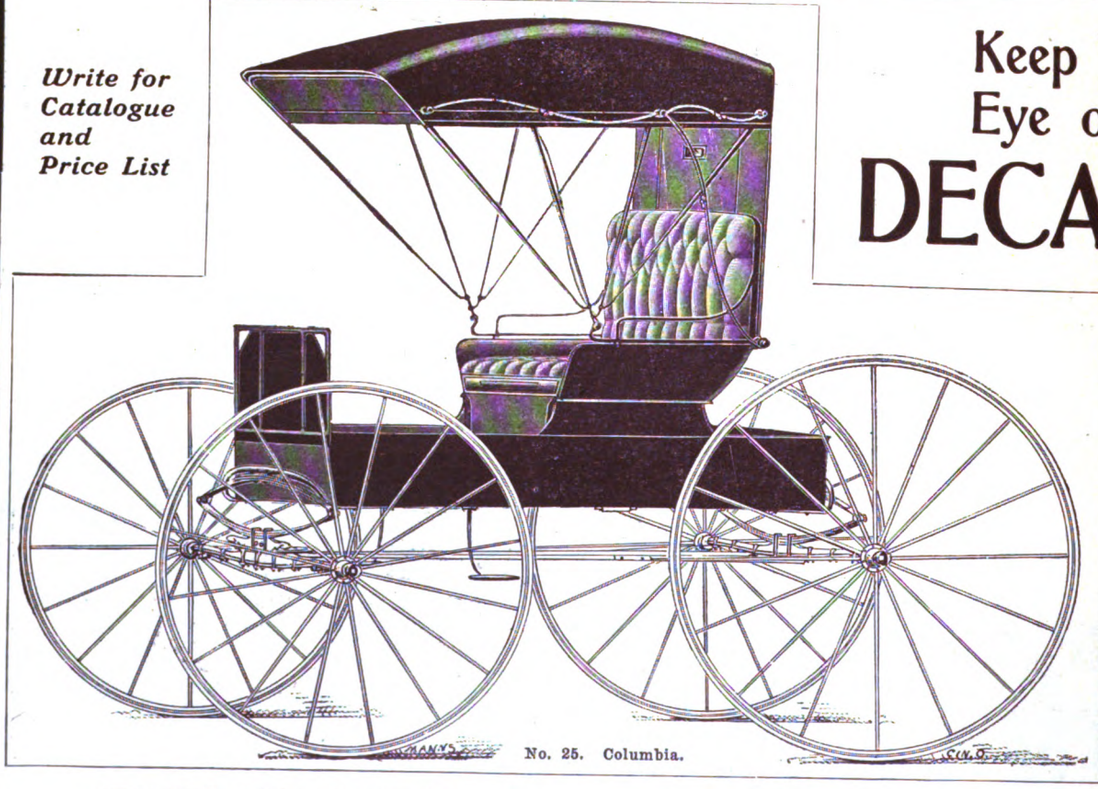
WRITE FOR CATALOGUE.

MACON, MISSOURI.

Write for Catalogue and Price List

Keep Your Eye on ..

DECATUR



No. 25. Columbia.

See us at Cincinnati in November

DECATUR BUGGY CO.

MIDDLETOWN, OHIO.

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SUMMER... BARGAINS

HAVE YOU SEEN THEM ?

WHY NOT WRITE FOR CUTS AND PRICES ?

BUGGIES

DRIVERS

SURREYS

AT PRICES THAT COUNT

Parry Mfg. Co.

INDIANAPOLIS, IND.

Please mention "The Hub" when you write.

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ARE YOU WITH REX... BUGGY CO. US?

Up to Date — Always Busy

Connersville, Ind.

THE COLUMBIA WAGON CO.
COLUMBIA
COLUMBIA, PA. U.S.A.

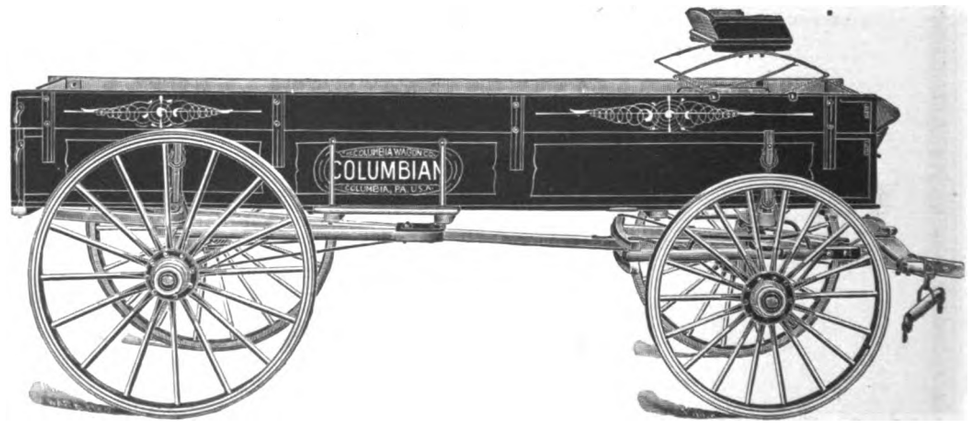
"Next in advantage to having the thing to sell, is to have the convenience to carry it to the buyer."
Wm. McKinley
at Buffalo.

BY THIS MARK YOU WILL KNOW THEM

Our line of Furm and Road Wagons are quick sellers and the largest money makers on the market
Send for catalogue and prices and do not place your order before looking us up

Our Sarven Patent Wheel Farm Wagon

One of the many styles we are building.



Please mention "The Hub" when you write.

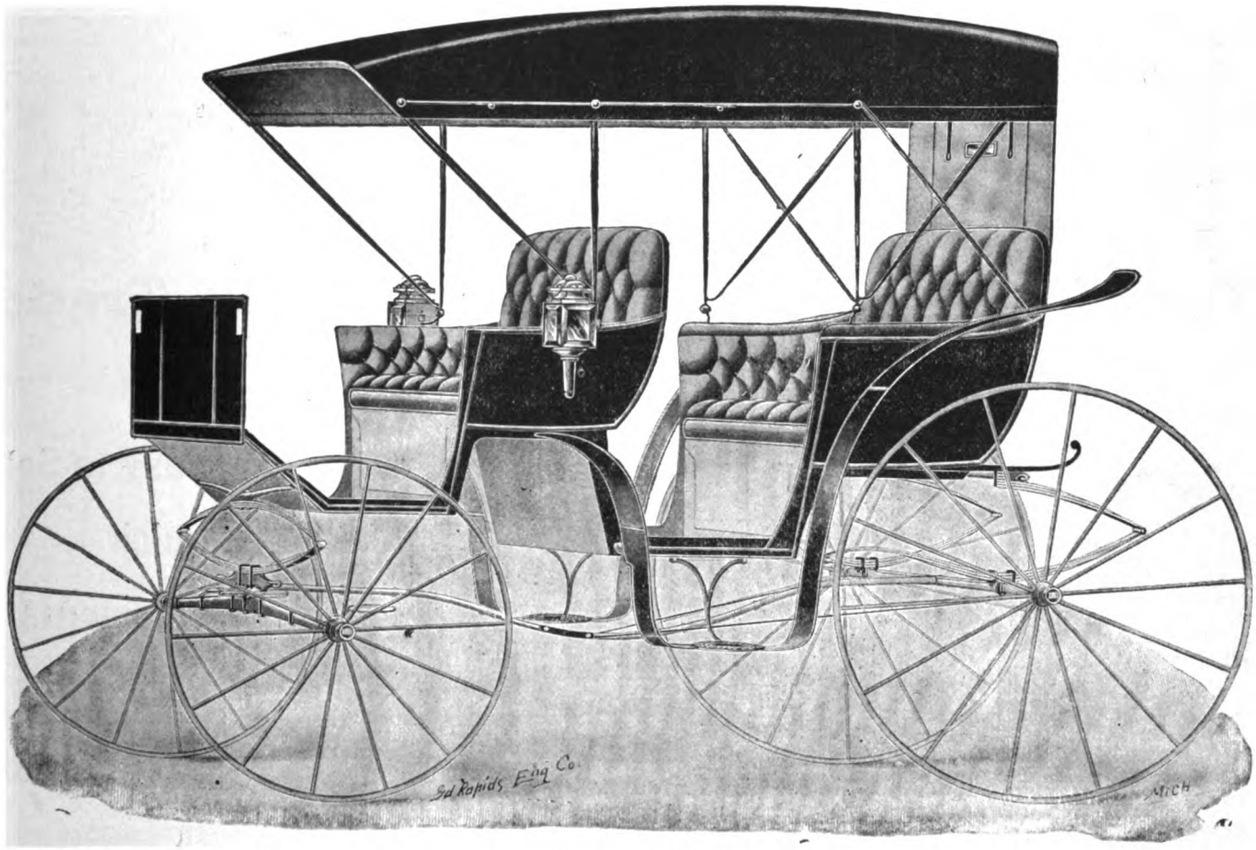
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Watertown Carriage Co.

WATERTOWN, N. Y.

BUILDERS OF HIGH-GRADE **CARRIAGES**

FROM OUR OWN DESIGNS



No. 120. PRINCESS.

Many new styles are in the works, and will, we are sure, be pleasant surprises. Our new catalogue will soon be ready. Do you want one?

Watertown Carriage Co.

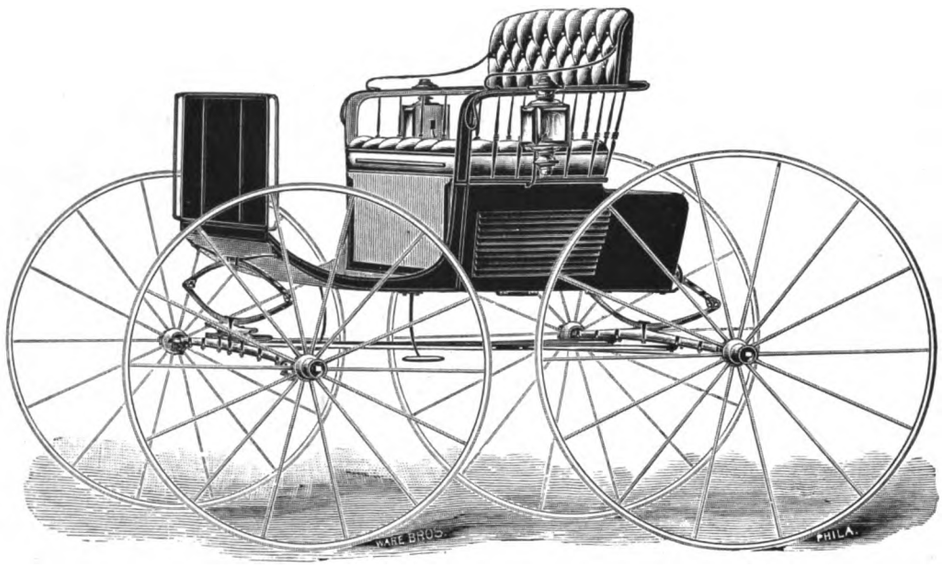
WATERTOWN, N. Y.

Please mention "The Hub" when you write.

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STAVER CARRIAGE CO.,

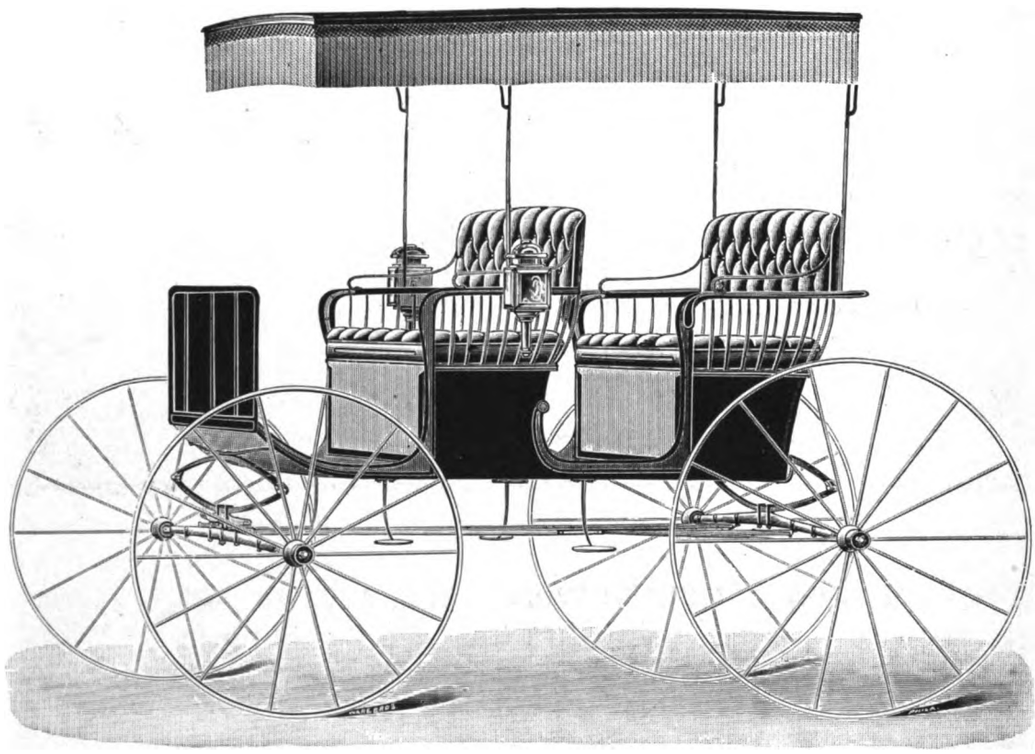
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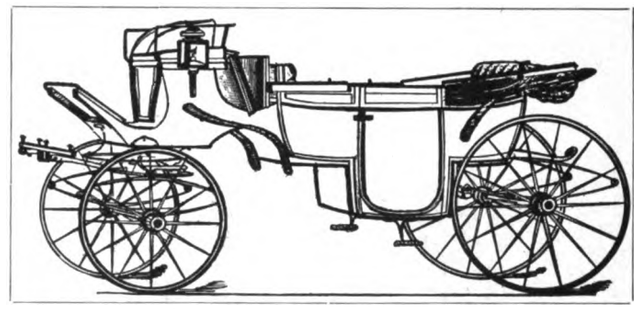
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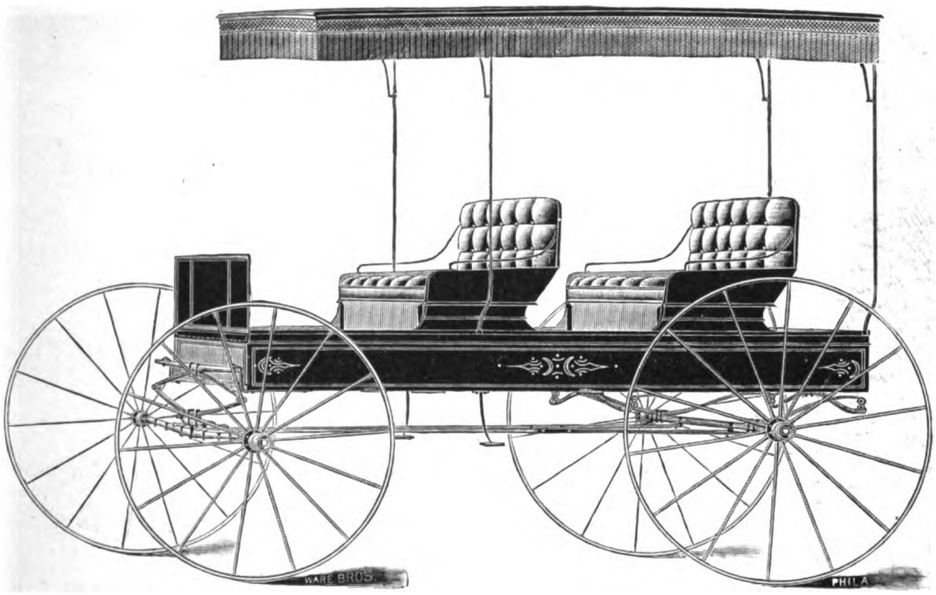
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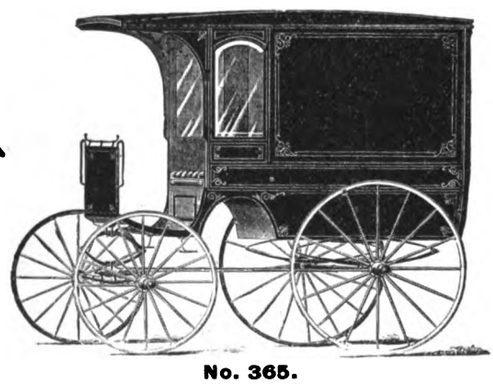
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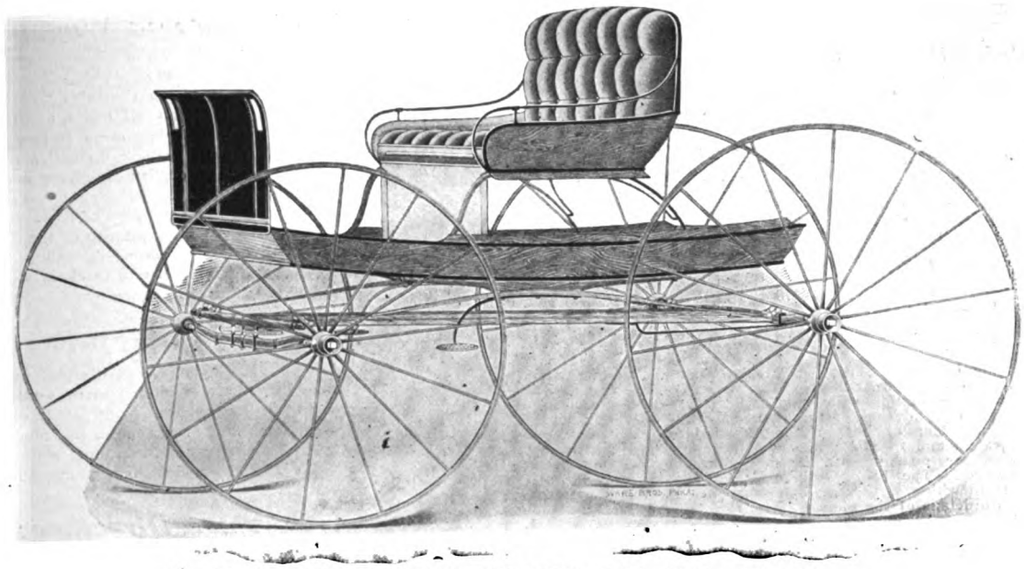
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By Gardner D. Hiscox, M. E. This work is written on a broad basis, and comprises in its scope a full illustrated description with details of the progress and manufacturing advance of the automobile. The make-up and management of automobiles of all kinds is liberally treated, and in a way that will be appreciated by those who are reaching out for a better knowledge of the subject. The book is up-to-date and very fully illustrated with various types of automobiles and motor cycles, with details of the same.

Lessons in Lettering and Monogram Making; price, $2.00.

An invaluable book for young and old wagon painters and letterers. Contains over 100 pages and over 200 illustrations, and treats very thoroughly on the construction of letters, monograms, etc. It is the only practical work published on the following subjects:

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How to Space Letters.
Punctuation. The Shading of Letters. Gilding.
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The Complete Carriage and Wagon Painter; price, $1.00.

A work of nearly 200 pages and 200 illustrations. Detailed directions given for painting carriages, wagons and sleighs, besides full instructions in all the various branches, including lettering, scrolling, ornamenting, striping, varnishing and coloring, with numerous receipts for mixing color. It contains information of value to the most expert painter, and is indispensable to those whose opportunities for learning the business have been limited. This book will be found valuable to all, and treats, among other things, of wagon striping, with descriptions of tools employed; wagon lettering, with illustrations of a great variety of letters, and directions how to make and shade them. Wagon scrolling is fully described and illustrated, and also stenciling.

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This book contains original colored designs in modern sign lay-outs, with beautiful rococo scroll work and all the latest modern alphabets, together with all standard and legitimate styles. It stands absolutely alone. Nothing like it has ever been published. No expense has been spared in compiling this work. Up to date ideas—up to date suggestions. 45 pages of illustrations. Size, 8½x12 inches, bound in maroon flexible cover.

Practical Carriage and Wagon Painting; price, $1.00.

A very complete work on the subject of carriage and wagon painting. It covers all topics pertaining to this branch of the trade, including every feature of the work from priming to finish, with a discussion of tools, materials and paint shop appliances, giving many practical methods and formulas and devoting one chapter to the painting of cutters and sleighs. The name of the author, M. C. Hillick, is sufficient guarantee of the high standard of the work. He has succeeded in making it plain and practical enough for all. Bound in cloth, well illustrated and containing upward of 160 pages.

Painters' Encyclopedia; price, $1.50.

By Franklin B. Gardner. 158 illustrations, 427 pages. Containing definitions of all important words in the art of plain and artistic painting, with details of practice in coach, carriage, railway car, house, sign and ornamental painting, including graining, marbling, staining, varnishing, polishing, lettering, stenciling, gilding and bronzing.

American Carriage Directory; price, $6.00.

This work contains a complete directory of the United States of the carriage and automobile builders and dealers, accessory manufacturers, etc. It contains over 36,000 carriage and wagon makers, 22,000 carriage and wagon dealers, 3,000 material manufacturers and dealers, 7,000 sleigh manufacturers and dealers. Since the previous issue many changes have been made in location, new names, names crossed out and changes in firm names.

Practical Carriage Building, 2 vols.; price, $1.00 each.

A compilation of practical articles showing timber plans for a carriage shop. Vol. 1 considers tools, floor and bench and woodworking appliances; the making of wheels, and practical hints on repairing; descriptions of mortises and laps for carriage-parts, and practical hints on the gather of wheels, plumb spoke, etc. A book of 224 pages, profusely illustrated, finely printed and bound in cloth.

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Volume 2. Use and management of iron and steel in shop work. Bolt and rivet clippers. Chisels and chisel shaped tools. Drills and drilling. Fullering and swaging, and description of miscellaneous tools.

Volume 3 treats of blacksmiths' tools, bench tools, tools for farm work, etc.; wrenches, welding, brazing, soldering, tempering, hardening, testing, hand forgings; making of chain swivels and plow work.

Volume 4 covers miscellaneous carriage iron, tire handling, setting axles, springs, bob sleds, tempering tools, proportion of bolts and nuts, welding and hardening steel, and finally iron and steel tables of use to carriage, wagon and sleigh makers.

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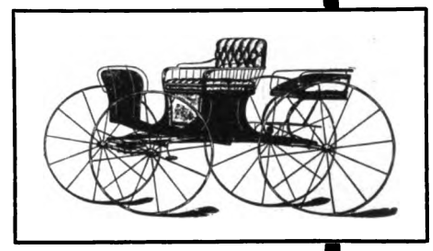
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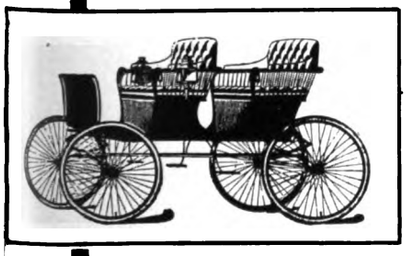


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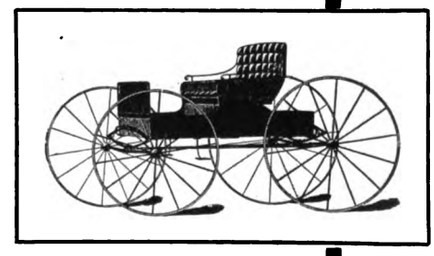


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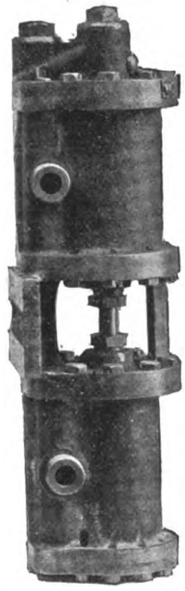
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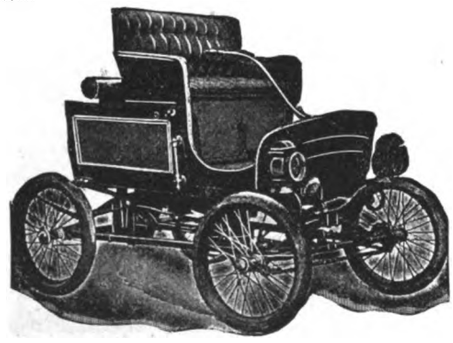
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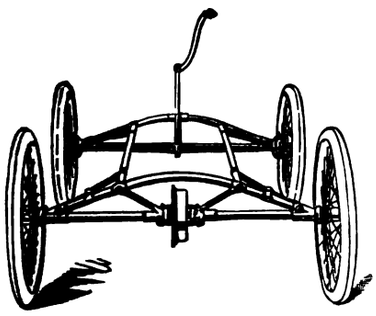
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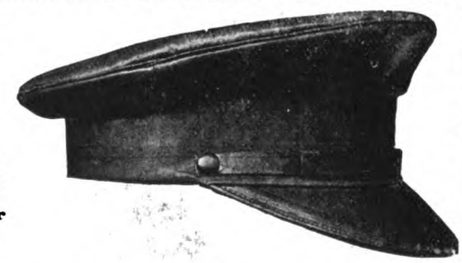
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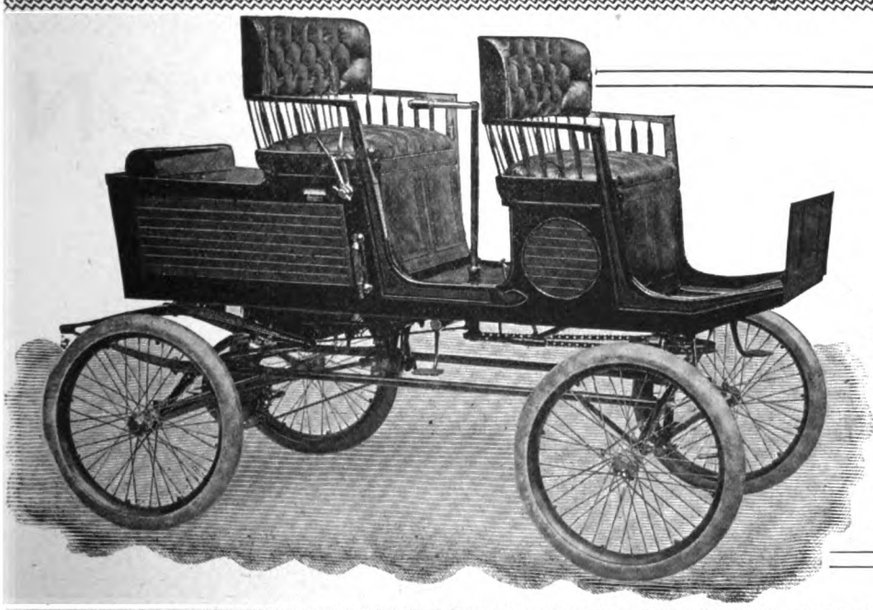
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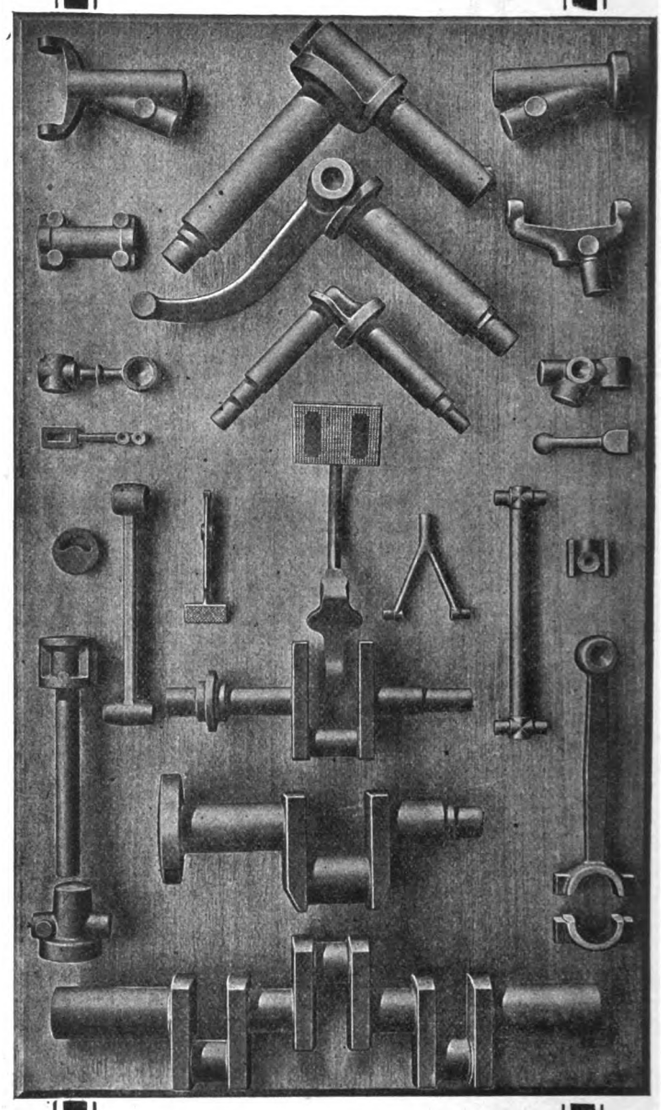
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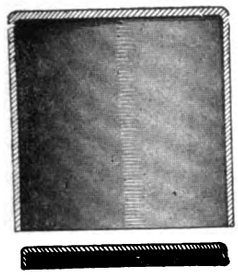
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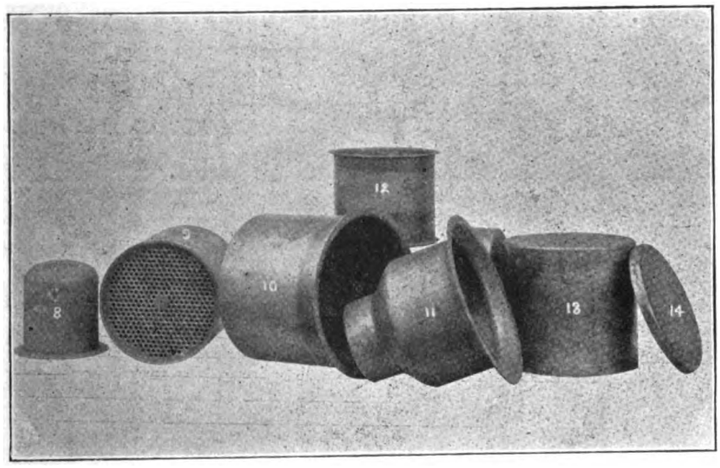
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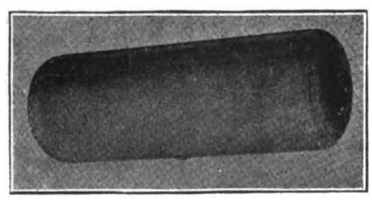
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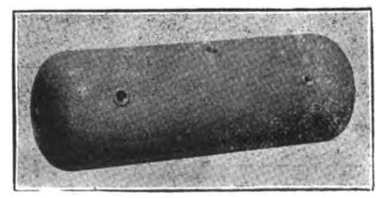




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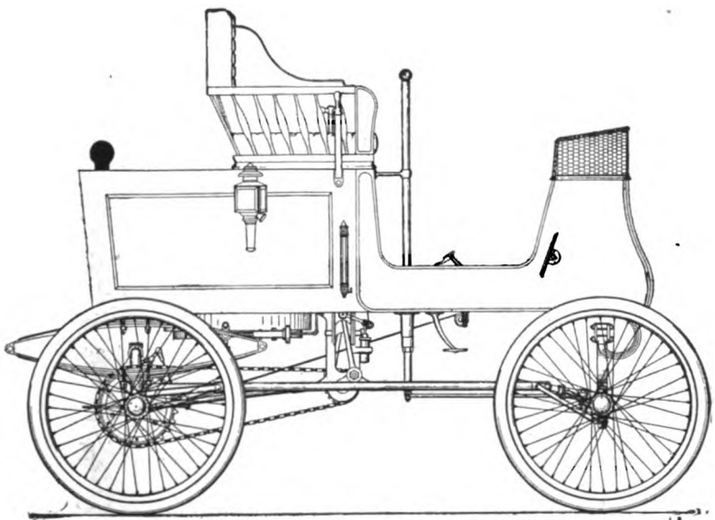
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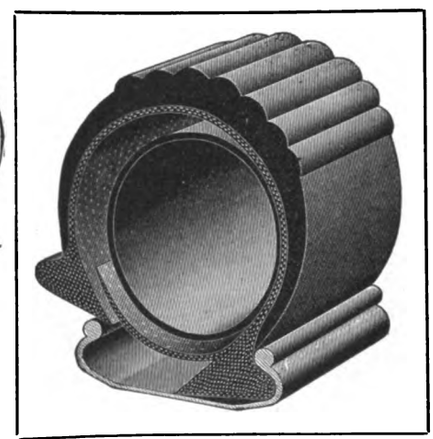
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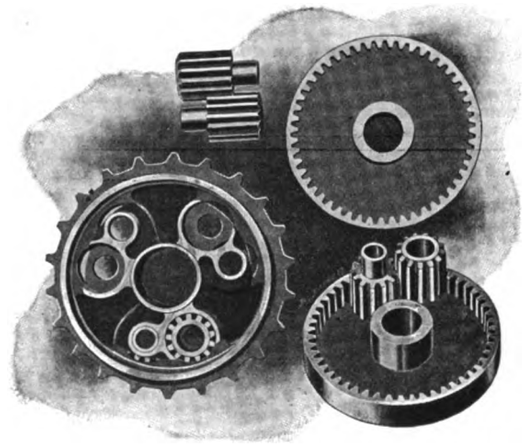
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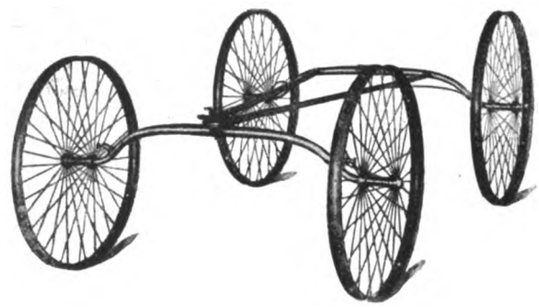
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The Hub

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Entered at the New York Post Office as Second Class matter.

VOL. XLIII. NEW YORK, NOVEMBER, 1901. No. 8

Publishers

TRADE NEWS PUBLISHING CO. OF N. Y.

24-26 MURRAY STREET, NEW YORK.

W. H. TAYLOR, *President.*

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THE HUB is published monthly in the interests of employers and workmen connected with the manufacture of Carriages, Wagons, Sleighs, Automobiles and the Accessory trades, and also in the interests of Dealers.

Subscription Price for U. S., Canada, Mexico, Cuba, Porto Rico, Guam, The Philippines, and the Hawaiian Islands, $2.00, *payable strictly in advance.* Single copies, 25 cents. Remittances at risk of subscriber, unless by registered letter, or by draft, express, check, or post-office order payable to the order of TRADE NEWS PUBLISHING CO.

For advertising rates, apply to the Publishers. Advertisements must be acceptable in every respect. Copy for new advertisements must be received by the 25th of the preceding month, and requests to alter or discontinue advertisements must be received before the 12th day of the preceding month to insure attention in the following number. All communications must be accompanied by the full name and address of writer.

FOREIGN REPRESENTATIVES.

FRANCE.—L. Dupont, publisher of *Le Guide du Carrossier,* 78 Rue Boissiere, Paris. Subscription price, 15 francs, postpaid.

GERMANY.—Gustave Miesen, Bonn a. Rh. Subscription price, 12 marks, postpaid.

C. B. N. A. Prize Offers.

WE note with pleasure the recommendation of the Executive Committee of the Carriage Builders' National Association, offering prizes to workmen for carriage drafts. We have always favored offering such prizes, and in the early days of the association these competitions were an interesting feature of the annual meetings. They more than any other one act influenced the movement that led to the founding of the technical school, now one of the most valuable schools for mechanics in this country. At the time the school was organized it was deemed best to discontinue the special prizes, as the tendency would be to detract from school work. Now, however, there is a marked change, draftsmen are far more numerous than they were and such competition is more likely to assist in technical education rather than to detract from it. The value of the awards is sufficient to warrant workmen devoting their time to the competition. And we are pleased to note that the motion to sell the prize winners, at auction, to the highest bidder was voted down. The only excuse for such an act was that it would bring money into the Association. The objections are too many to enumerate, but one alone is sufficient. The Association should not be a party to give special aid to any firm, no matter how remote, as would be the case if these were sold as proposed. The poorest member of the Association should have as free access to them as the richest, which would not be the case if sold, at auction or in any other way. There must be no exclusive ownership of such drawings if the Association is to deal justly with its members. We invite the attention of carriage draftsmen to these awards, published in connection with the report of the C. B. N. A. Convention, and shall hope for a large response to the offers.

In the Wake.

Now that the exhibit of finished carriages is closed in New York City, we may cast our eyes around and see what is left in the wake. First there is the general feeling that the exhibition was a marked success as a show, and that those having it in charge did their part well and deserve the reward gathered. Then it was also a success in the quality of its exhibits, even the low grades had their lesson, they showed how good a vehicle could be built for little money, and explained why so many carriages were used in our country. Then there was the cream of the show, the high grade vehicles. These were not always artistic in design, although confessedly striking. A few were of the finest workmanship in their mechanical parts, but there was far too many evidences of skinning the painting. A little more attention to foundation coats would have removed the most serious blemishes and contributed to better the finish. There was a marked advance in the character of the trimming, but the cheap cords nullified the good work done with better grades, and suggested the possibility of a more general return to cloths. There was a marked difference in the reports as to the financial end of the show. Some exhibitors claimed big sales, others fairly satisfactory returns, while a few admitted disappointment. This condition held good among exhibitors of materials as well as among exhibitors of finished vehicles. They who showed materials laid their failures to the absence of carriage builders, other than exhibitors, and to the latter being more interested in talking to dealers and booking

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orders than in the purchase of materials, and to the other fact that few dealers took anything more than a passing interest in materials, as they do not handle them in any way. Carriage exhibitors were heard to complain of the salesmen of carriage material houses being so intent upon making sales of their goods as to overlook the fact that the carriage and wagon men who exhibited vehicles were there as sellers, not as buyers, and they felt to resent the demand made upon their time by the energetic salesmen of houses who manufactured materials. not vehicles. And out of this condition of affairs there grew some strong protests against the combining the sale of carriage materials with finished vehicles, and there were not a few who expressed themselves strongly against the combination of the two lines of exhibits at one time and one place.

The Cincinnati Strike.

THE contest now being waged in Cincinnati, O., between carriage workmen and their employers is the most serious that has confronted the carriage trade in many years, and is one that has already caused great loss to workmen and employers, and unless settled must work permanent injury to the carriage industry of Cincinnati. The carriage trade has been exempted for many years from trade strikes of serious nature and the wages earned by skilled workmen have averaged better than with most other industries. Employers and employed have settled prices without the intervention of outside parties. The recent movements leading to organizations among carriage workmen has changed the situation, as the workmen have surrendered their interests into the hands of trade society leaders, who must earn their salaries drawn from the wages of the workers, even though the latter suffer and their families want. The men having thus yielded their independence and manhood, there seems to be no opportunity for an adjustment, but now that they have undertaken the task of preventing men working who would work, it is possible the better judgment of the manly men of the trade will assume itself and they will discard the selfish advice of those leaders, who are using the workmen to further their own selfish aims. There are broad principles that cannot be discarded without working untold injury, among which are: The right of employers to make individual wage contracts with their workmen, to employ those who they may choose, and to refuse employment to those who they do not want and to run their factories in their own way, so long as they do not conflict with the laws of the land. On the other hand every workman has a right to sell his labor to the highest bidder; to determine for himself whether the conditions imposed are beneficial or otherwise; to seek employment wherever he desires; to make such arrangements as he may agree upon with his employers, and to increase his earnings if he can do so, through extra labor or extra skill. Unless these rights are granted, employers nor employed have the freedom that our laws offer them. We publish elsewhere the declaration of principles and statement issued by the Cincinnati manufacturers, and we can see nothing in them that is unjust to their employees. We do not believe men with so much at stake as the carriage manufacturers of Cincinnati have under present conditions, would adhere to demands that were unjust. With them it means loss of trade, heavy expense accounts, and possibly a removal of their business to some other locality where there are less factories and therefore less men who can be drawn into a labor organization. If they are ready to submit to all these losses rather than to yield to the demands of their workmen, it is because they consider this the lesser evil. We would regret to see the carriage trade of Cincinnati scattered to smaller towns, as we believe the result would be to Cincinnati what such strikes have been to other cities, the trade would be scattered permanently. The factories are all open and employment is offered to all who may choose to go to work, without any reduction of wages, and we hold it to be the duty of the Mayor of that city to see that all attempts to interfere with men who choose to work be checked and that all are protected from violence, and our advice to those workmen who are unwilling to accept the terms offered by the manufacturers, is to seek employment elsewhere.

Automobile "Scorching."

THE determination to disregard the rights of others has developed to an alarming extent among automobilists, and is doing much toward antagonizing communities to an extent that will eventually lead to the enactment of laws that will work to the injury of the automobile. Protests have been entered against the speed at which the machines are driven through the cities, speed that would lead to the arrest of any horseman who drove his animal equally fast. The dangers to the occupants of the auto and to people on foot or horse are so pronounced that common respect, if not personal safety, should lead to a more conservative course, without the intervention of force, but if these will not, laws will be enacted that will not only check this recklessness, but will go far toward depriving the sport of much of its pleasurable features. We are aware that automobile clubs have put themselves on record against extreme speed on public streets, yet until the individual members thereof, even officers of such organizations, act up to the spirit of those resolutions, the associations' acts will be valueless. We believe in speed contests, we hold that they determine much that could not be known otherwise, but we would as quickly advocate converting streets and avenues into tracks for running horses as we would for turning them over to automobiles. The right to run horses on the public streets is as strong as that of the automobile, but if an attempt was made to convert any one of our streets into a race track, we imagine that every automobilist would be the first to object. Being fearful of the enactment of laws that will serve to restrict the use of automobiles, we cannot but enter our protest against the spirit that prompts so many to speed their vehicles on public streets and roads, reckless as to results.

The New York Horse Show.

THE National Horse Show Association will hold its next annual show at Madison Square Garden during the entire week beginning November 18. This show is sure to bring large numbers of carriage builders and harness makers to New York, and THE HUB hopes to welcome many who have not heretofore been present, and in our December number we will give to our readers a full account of the show and such new styles of vehicles as we may think of

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value. Every carriage man who handles fine vehicles should attend, and so should every man who is interested in proper harness and harnessing.

The Cincinnati Vehicle Exposition.

THE exhibition of finished carriages to be held in Cincinnati at the time of the meeting of the Inter-State Protective Dealers' Association, beginning November 17th and continuing through the week, promises to be a success in every way. The carriage exhibitions are crowded together a little too close, but they have become important factors in the trade and dealers cannot afford to miss them. Favorable railroad rates are obtained and the additional expenses are light as compared with the advantages of the exhibition, so we shall expect a large collection of vehicles and harness, a swarm of dealers, and a great booking of orders, so that all will be pleased and benefited by the exhibition and the dealers' meetings.

GLAZING COLORS AND GLAZING.

SOME of the most brilliant colors known by carriage painters are found to be glazing colors and depend for their beauty of tone and lustre upon the ground work prepared for them. Carmine, the *piece de resistance* in the range of lovely pigments, is only shown at its best when used over a ground work scarcely less beautiful than itself. In fact, the surface must be absolutely faultless if the pure carmine effects would be had. The ground may be vermilion, for a light carmine, or Flamingo red for a medium and Indian red a dark carmine, but perfection in all cases is necessary to command the best results. The carmine—all glaze colors, in a word—is used simply to enrich the ground color. When used in any other capacity its function is abused, and an inferior color effect, not to mention the inferior wearing quality, must ensue.

French coach painters are wonderfully adept in handling glaze colors and in preparing foundation coats for them, and we have noted ground colors for carmine which to an unpracticed eye would pass as carmine of a high order. The Frenchman's secret—and why not the American's secret as well?—of success in glazing consists, first, in the exceeding care observed in bringing the ground work up to the final coat, and, second, in using the glaze color proper washed out in varnish until a transparent glaze, full in flowing properties, and rich in color effects, is to be had.

For many years the American carriage painter struggled with the glazing problem without completely solving it. But for the last decade his glazed surfaces have excited the admiration of vehicle users the world over. When he began to use less color and more varnish, and to flow his glaze coats instead of brushing them out to a lean, skimpy film, the day of finer, richer glaze surfaces dawned at once. In carmine glazing effects none are perhaps quite so radiant as No. 40 carmine glazed over a ground prepared of carmine and a light shade of English vermilion. Bring the ground up from a peach-blow color. Next use vermilion. Next use 3 parts of English vermilion to 1 part No. 40 carmine. Mix in rubbing varnish, and thin out with enough turpentine to hold the surface short of a high gloss. Moss this coat, clean up perfectly, and flow the carmine glaze coat. The French red, which means Indian red and English vermilion glazed with No. 40 carmine, is a fascinating belle in the circle of glaze colors. Not a few of the modern fashionable reds are seen at their best when glazed over ground colors made perfect to the last analysis.

In blues, the most brilliant are obtained by glazing effects. Glaze ultramarine blue over a ground of Prussian blue and you have a brighter blue than can be otherwise obtained. Ultramarine blue, of the different shades, should always be used as a glaze color, for herein its beauty lies. Probably one of the most gracious color effects is obtained by glazing ultramarine blue, medium shade, over a ground of deep green.

The lakes are, in a true sense, glazing colors, and only when used as such are they found in their best state. For example, glaze maroon lake over Tuscan red; Munich lake and carriage part lake over Tuscan red, dark shade, or lamp black. Use crimson lake over a vermilion ground.

Description of Latest Styles.

CUT-UNDER BUGGY.

Scale, ½ in. to the foot.

(See Fashion Plate No. 528.)

FASHION plate No. 528 illustrates a cut-under buggy, one of the features of the coming season. This one was built by the Columbus Buggy Co., of Columbus, O. It is a very roomy vehicle and, owing to the cut-under, it has the advantages of short turning, as the wheel turns under to the perch.

Dimensions of Woodwork.—Body, length outside, 57 in.; width across bottom, 24 in. Width of seat across top outside, 38 in.; across bottom, 32 in. Wheels, wood hub. Height, front, 40 in.; rear, 44 in. Hubs, length, 6½ in.; diam. at center, 3½ in.; front end, 2½ in.; back end, 3 in. Size of spokes, 1⅛ in. Number of spokes, 14 and 14. Stagger, ⅜ in. Depth of rims, 1 3-16 in. Tread of rims, 1 in. Depth of bands, front, 2½ in.; back, ¾ in. Distance between center of axles, 53 in.

Dimensions of Ironwork.—Combination cross springs, 32 in. long between centers of heads, with 4½ in. opening on main leaf. Width of steel, 1¼ in. Number of plates, 4. Thickness, No. 3 steel. Axles, 1 in. Tires, 1 in. by ¼ in. steel. Fifth wheel, 12 in. diam. Track, outside, 4 ft. 8 in.

Painting.—Body, black; seat panel, dark olive green; molding on seat, light olive green. Gear, light olive green, fine lined with dark olive. Trimming, dark whipcord, cushion and back made up in blocks.

PARK WAGON.

Scale, ½ in. to the foot.

(See Fashion Plate No. 529.)

FASHION plate No. 529 illustrates a park wagon built by W. S. Frazier & Co., of Aurora, Ill. There is much that is novel and attractive in this vehicle, both in body and gear.

Dimensions of Woodwork.—Body, width across outside, 30 in. Width of seat across top outside, 39½ in.; across bottom, 37 in. Paneled section at center of body, projects ⅝ in. from body at bottom and flares ¼ in. on each side. Wheels, wood hub. Height, front, 39 in.; rear, 43 in. Hubs, length, 6½ in.; diam. at center, 3½ in.; front end, 2½ in.; back end, 3 in. Size of spokes, 1 in. Number of spokes, 14 and 14. Stagger, ½ in. Depth of rims, 1 3-16 in. Tread of rims, 1 in. Depth of bands, front, 2½ in.; back, ¾ in. Distance between center of axles, 47 in.

Dimensions of Ironwork.—Springs, front, 34 inches long between centers of heads, with six in. opening on main leaf. Width of steel, 1¼ in. Number of plates, 3. Thickness, No. 3 steel. Back, 34 in. long, with 6 in. opening on main leaf. Width of steel, 1¼ in. Number of plates, 3. Thickness, No. 3 steel. Axles, 1 in. Tires, 1 in. solid rubber. Fifth wheel, 12 in. diam. Track, outside, 4 ft. 8 in.

Painting.—Body, black, except the seat and three panels on sides under seat, which are dark green; moldings striped sulphur yellow. Gear, dark green, striped sulphur yellow. Trimming, brown cloth, made up in blocks.

END SPRING RUNABOUT.

Scale, ½ in. to the foot.

(See Fashion Plate No. 530.)

FASHION plate No. 530 illustrates an end spring runabout of the heavier type, built by Fouts & Hunter, Terre Haute, Ind. The panels are so molded as to divide the side into three panels, the middle one being cut by an extension of the seat pillar. The seat end is given a heavy appearance by extending down to the top slat of the body side.

Dimensions of Woodwork.—Body, width across outside, 28 in. Width of seat across top outside, 42 in.; across bottom, on top of body, outside, 32 in.; at rear upper corner, 38-in. Wheels, wood hub.

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Height in the wood, 43 in.; rear, 47 in. Hubs, length 6½ in.; diam. at center, 3½ in.; front end, 2¾ in.; back end, 2½ in. Size of spokes, 1⅛ in. Number of spokes, 14 and 14. Stagger, ¼ in. Depth of rims, 1 3-16 in. Tread of rims, 1 in. Depth of bands, front, 2½ in.; back, ¾ in. Distance between center of axles, 49 in.

Dimensions of Ironwork.—Springs, front, 36 in. long between centers of heads, 6½ in. opening on main leaf. Width of steel, 1¼ in. Number of plates, 4. Thickness, main, No. 3, rest, No. 4 steel. Back, 36 in. long, with 7 in. opening on main leaf. Width of steel, 1¼ in. Number of plates, 4. Thickness, main, No. 3, rest, No. 4 steel. Axles, 1 in. Tires, 1 in. solid rubber. Fifth wheel, 12 in. diam. Track, outside, 4 ft. 8 in.

Painting.—Body, black; quarter panels, amber brown. Gear, light amber brown, striped with dark brown. Trimming, dark Bedford cord, a description of which is given in the Technical Department of this issue.

AMERICAN JAUNTING WAGON.

Scale, ½ in. to the foot.

(See Fashion Plate No. 531.)

FASHION plate No. 531 illustrates a novel vehicle built by the Parsons Vehicle Co., of Columbus, O., which is termed by them, an "American Jaunting Wagon. It has accommodations on the side seats for four persons, and on the front for two. It should prove popular vehicle for summer resorts and for small outing parties. It has a tail board hinged at the bottom. This is slatted and painted carmine, like the toe board.

Dimensions of Woodwork.—Body, width across outside, 30 in. Width of front seat outside, 36 in.; width of side seats outside, 36 in. Wheels, wood hub. Height in the wood front, 36 in.; rear, 44 in. Hubs, length, 7 in.; diam. at center, 4½ in.; front end, 4¾ in.; back end, 3½ and 3¾ in. Size of spokes, 1⅜ and 1½ in. Number of spokes, 12 and 14. Stagger, ½ in. Depth of rims, 1½ in. Tread of rims, 1⅜ in. Depth of bands, front, 3 in.; back, 1 in. Distance between center of axles, 51 in.

Dimensions of Ironwork.—Springs, front, 36 in. long between centers of heads, with 8½ in. opening on main leaf. Width of steel, 1½ in. Number of plates, 5. Thickness, main, No. 3, rest, No. 4 steel. Back, 36 in. long, with 8 in. opening on main leaf. Width of steel, 1½ in. Number of plates, 5. Thickness, main, No. 3, rest, No. 4 steel. Axles, 1¼ in. Tires, 1½ x ⅜ in. Fifth wheel, 14 in. diam. Track, outside, 4 ft. 8 in.

Painting.—Body, black; moldings, black; all three toeboards are painted carmine, striped with a heavy line of black. Gear, carmine, no striping; bands, clips, etc., black. Trimming, Bedford cord.

CONTRACTOR'S WAGON.

Scale, ½ in. to the foot.

(See Fashion Plate No. 532.)

THE heavy wagon shown by fashion plate No. 532 is specially designed for contractors and builders. It is sufficiently strong to carry a heavy load and, being roomy, it can be used for carrying heavy hardware, building materials, plumbers' supplies, etc. The top is a three bow with canvas cover, but no back or side curtains; neither has it any top joints. The side sills are 1¼ by 3½ in.; front cross bar, 1¼ by 3½ in; tail bar, 1½ by 2¼ in.; the two intermediate cross bars are 2½ by 1¼ in.

Dimensions of Woodwork.—Body, length, 6 ft.; width across outside, 35 in. Width of seat outside, 36 in.; depth, 14 in. Wheels, wood hub. Height in the wood, front, 44 in.; rear, 48 in. Hubs, length, 9½ in.; diam. at center, 6½ and 7 in.; front end, 4 and 4½ in.; back end, 5 and 5½ in. Size of spokes, 1¾ and 1⅞ in. Number of spokes, 12 and 14. Stagger, ⅜ in. Depth of rims, 2 in. Tread of rims, 1¾ in. Depth of bands, front, 3 in.; back, 1 in. Distance between center of axles, 60 in.

Dimensions of Ironwork.—Side springs, 4 ft. 8 in. long between centers of heads, with 3 in. set. Width of steel, 1½ in. Number of plates, 9. Thickness, No. 3 steel. Axles, 1⅜ in. Tires, 2 in. by ½ in., steel. Fifth wheel, 14 in. diam. Track, outside, 4 ft. 8 in.

Painting.—Body, dark green, striped yellow. Gear, vermillion, striped black. Trimming, leather cushion, canvas top.

DELIVERY WAGON.

Scale, ½ in. to the foot.

(See Fashoin Plate No. 533.)

FASHION plate No. 533 illustrates a light delivery wagon well suited for light package deliveries in cities and large towns. The body is roomy, the style attractive and the hanging fairly inexpensive. The low front wheels and bent perch admit of short turning.

Dimensions of Woodwork.—Body, length over all, 7 ft.; width across top, 3 ft. 9 in.; across bottom, 3 ft. 6 in. Wheels, wood hub. Height, front, 34 in.; rear, 48 in. Hubs, length, 9 in.; diam. at center, 6 and 6½ in.; front end, 4 and 4¼ in.; back end, 4¾ and 5 in. Size of spokes, 1½ and 1⅝ in. Number of spokes, 12 and 14. Stagger, ⅜ in. Depth of rims, 1⅝ in. Tread of rims, 1½ in. Depth of bands, front, 3½ in.; back, ¾ in. Distance between center axles, 56 in.

Dimensions of Ironwork.—Springs, front, 36 in. long between centers of heads, with 8½ in. opening on main leaf. Width of steel, 1⅝ in. Number of plates, 6. Thickness, No. 2 steel. Back, 36 in. long, with 8 in. opening on main leaf. Width of steel, 1⅝ in. Number of plates, 6. Thickness, No. 2 steel. Axles, front, 1⅜ in.; rear, 1½ in. Tires, 1½ in. by 7-16 in., steel. Fifth wheel, 14 in. diam. Track, outside, 4 ft. 8 in.

Painting.—Body, upper panels are painted black, striped gold; lower panels are red, moldings which divide same are black. Gear, red, striped with black. Trimming, dash, cushion and fall, leather. Finish, handles and rein rail on dash, silver plated. Lamps, black.

END SPRING BUGGY.

(See "Latest Styles.")

PLATE CLXXIX illustrates a popular turnout. The body is the standard square box with spindle seat, hung upon elliptic springs. The gear is plain double perch, with high wood wheels and solid rubber tires. The harness is heavier than the standard road and the collar is of peculiar construction.

SKELETON CART.

(See "Latest Styles.")

PLATE CLXXX. A popular cart for showing high steppers and heavy harness horses at horse shows is shown by this illustration. The whole outfit is recognized as "standard."

RUNABOUT.

(See "Latest Styles.")

PLATE CLXXXI. This illustration represents a runabout on high wheels and rubber tires, the horse being equipped with a heavy round collar runabout harness.

LADIES' SPIDER.

(See "Latest Styles.")

PLATE CLXXXII. illustrates a light low spider with rumble, for ladies. The seat is roomy and being deep heightens the appearance of the body. The body is hung upon three springs. The front wheels are low, which permits a full turnunder to the perch.

DEMI MAIL PHAETON.

(See "Latest Styles.")

PLATE CLXXXIII. The demi mail phaeton is one of the standard high class driving vehicles of the heavy grade. It requires a heavy team and harness and it is on account of these requirements that we illustrate the one shown herewith as a fitting representative of its class.

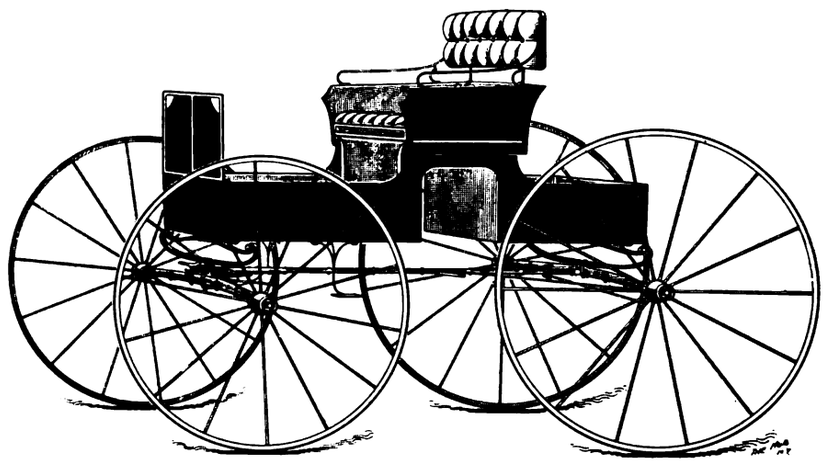
MINIATURE VICTORIA.

(See "Latest Styles.")

PLATE CLXXXIV. represents one of this season's designs of a miniature victoria, an ideal vehicle of its class; everything about it suggests neatness and good form. No better proportioned turnout than this has been seen at any of our horse shows or on our park drives.

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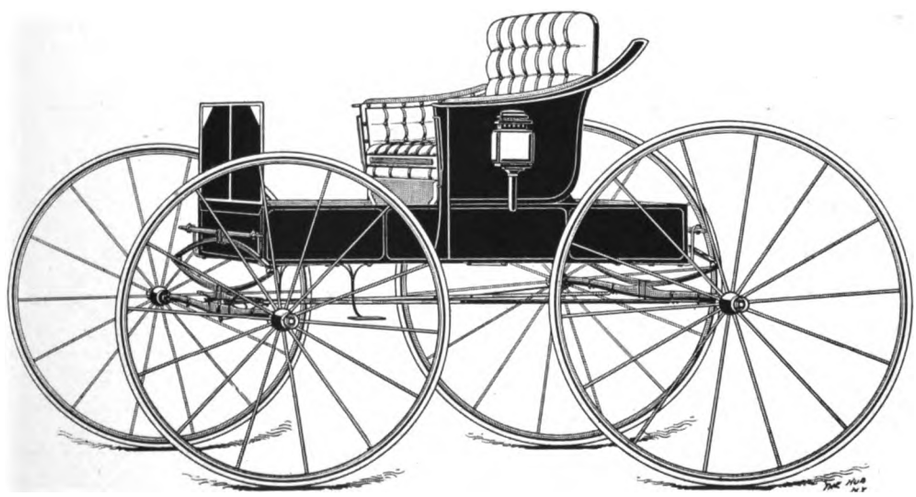
Latest Styles. November, 1901



No. 528. Cutunder Buggy.

SCALE, ½ INCH TO THE FOOT.

See description under "Latest Styles."

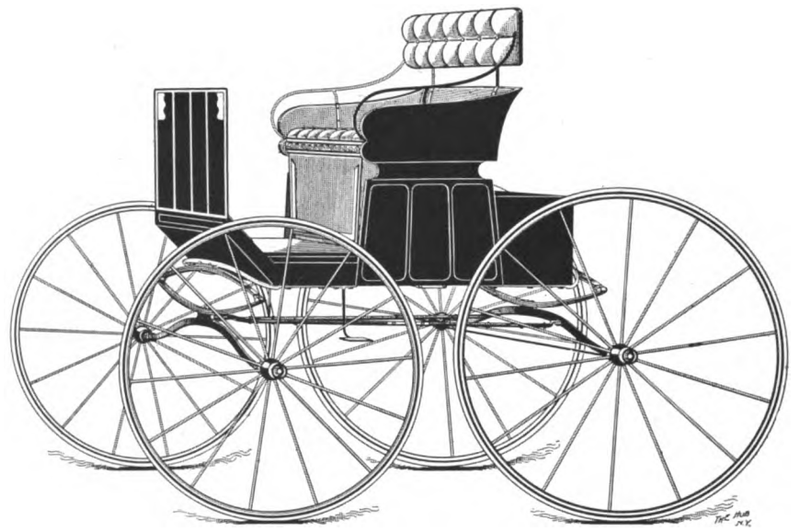


No. 529. End Spring Runabout.

SCALE, ½ INCH TO THE FOOT.

See description under "Latest Styles."

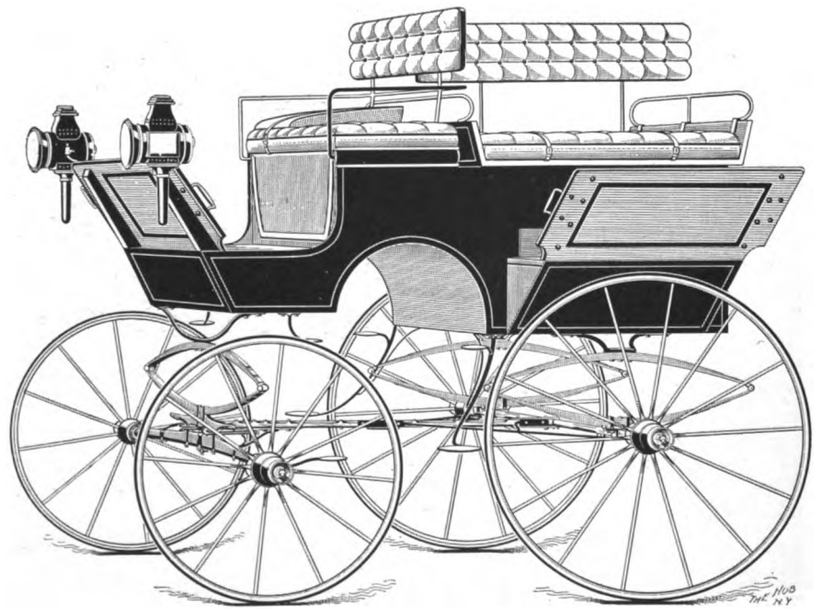
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No. 530. Park Wagon.

Scale, ½ inch to the foot.

See description under "Latest Styles."

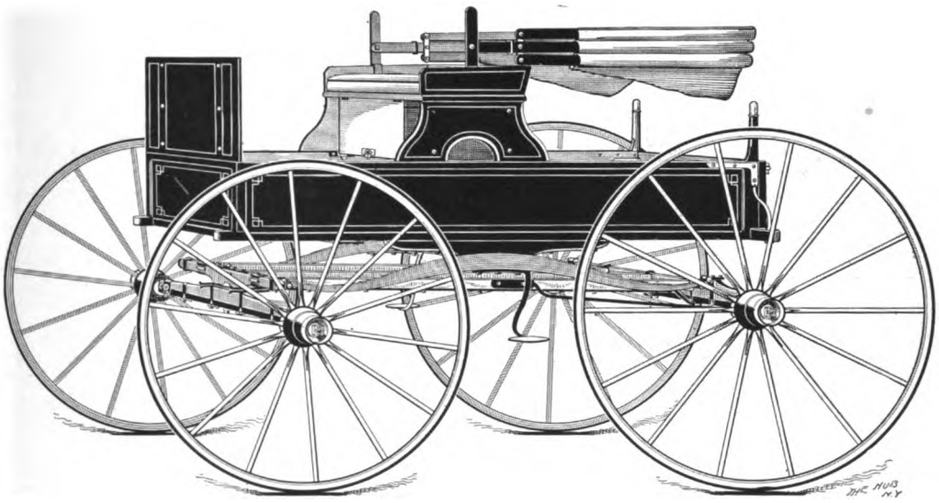


No. 531. American Jaunting Wagon.

Scale, ½ inch to the foot.

See description under "Latest Styles."

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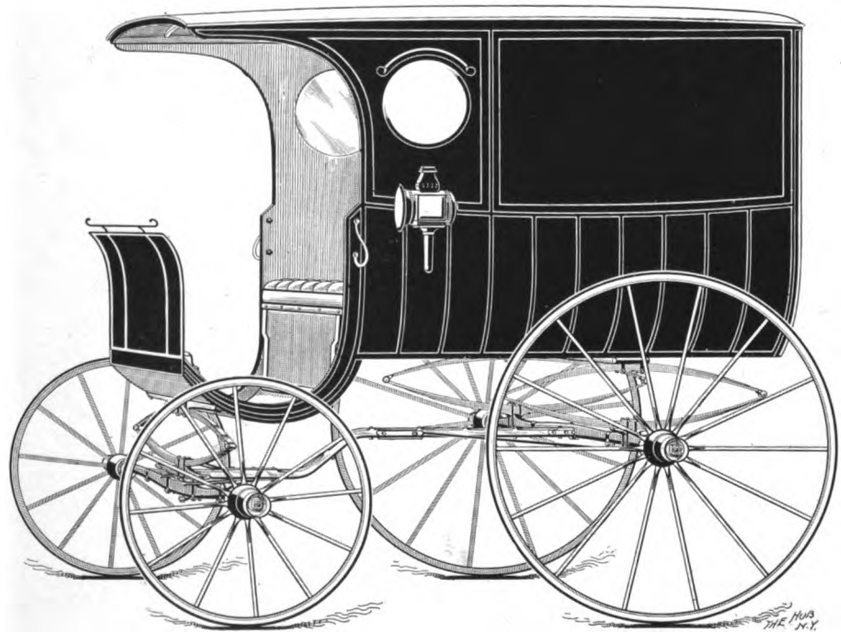


No. 532. Contractor's Wagon.

SCALE, ½ INCH TO THE FOOT.

See description under "Latest Styles."

(Electrotype, $1.50.)



No. 533. Delivery Wagon.

SCALE, ½ INCH TO THE FOOT.

See description under "Latest Styles."

(Electrotype, $1.50.)

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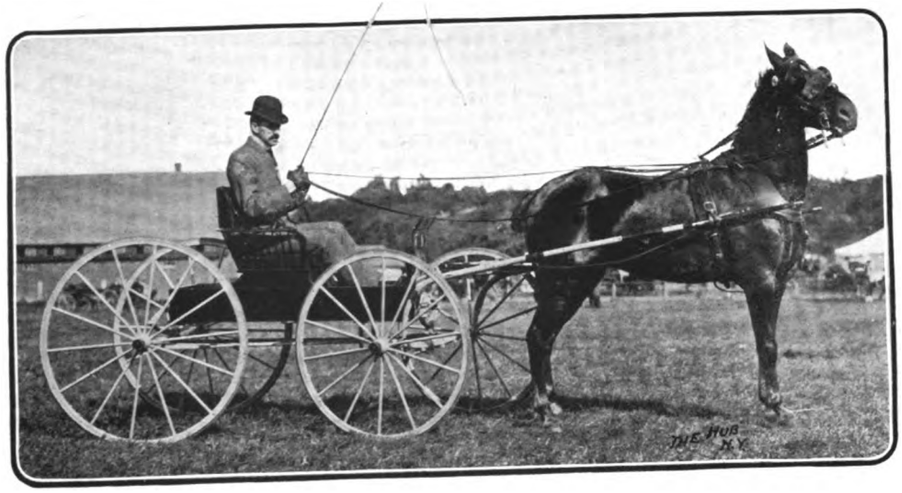


Plate CLXXIX.

End Spring Buggy.

See description under "Latest Styles."

(Electrotype, $2.00.)

Plate CLXXX.

Skeleton Cart.

See description under "Latest Styles."

(Electrotype, $2.00.)





Plate CLXXXI.

Runabout.

See description under "Latest Styles."

(Electrotype, $2.00.)

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Plate CLXXXII.

Ladies' Spider.

See description under "Latest Styles."

(Electrotype, $2.00.)

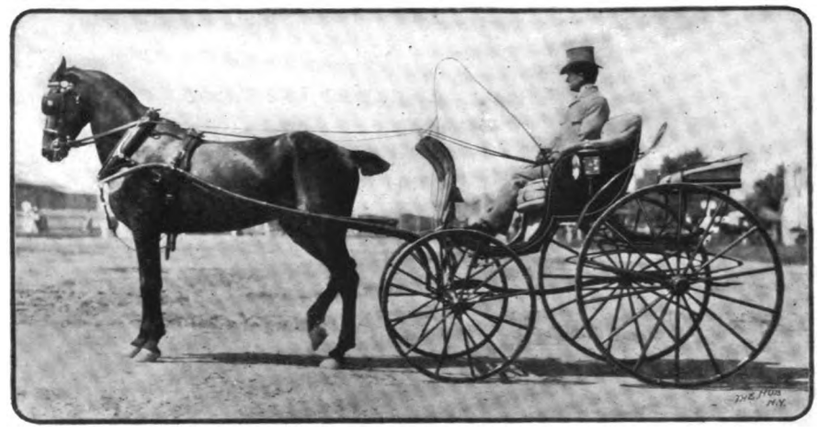




Plate CLXXXIII.

Demi-Mail Phaeton.

See description under "Latest Styles."

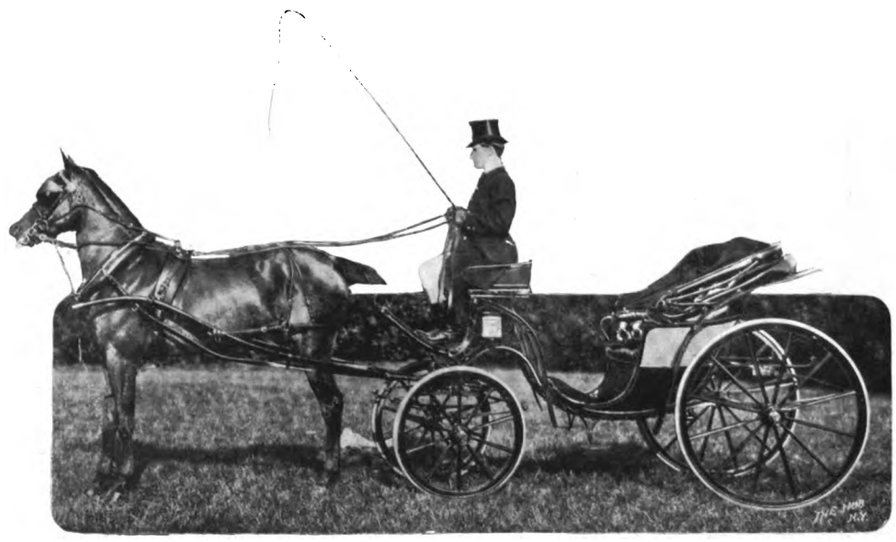
(Electrotype, $2.00.)

Plate CLXXXIV.

Miniature Victoria.

See description under "Latest Styles."

(Electrotype, $2.00.)



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Haynes-Apperson Motor.

Five Hundred Mile Endurance Test.



Knox Automobile.

Five Hundred Mile Endurance Test.



Dr. M. I. Mather in His Packard.

Five Hundred Mile Endurance Test.

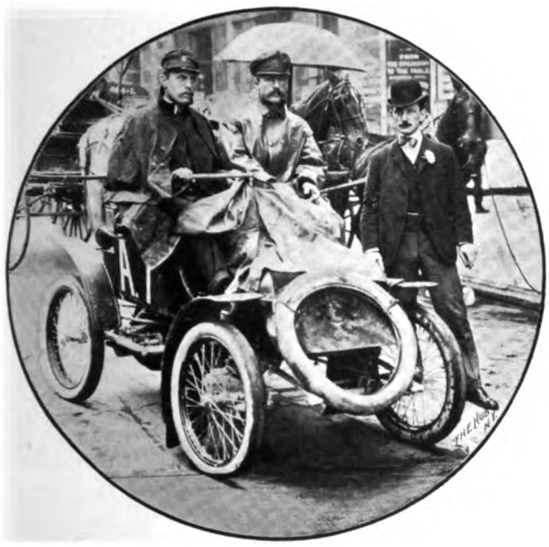


Automobile Co. of America Gas Mobile.

Five Hundred Mile Endurance Test.

Automobiles in the Five Hundred Mile Endurance Test.

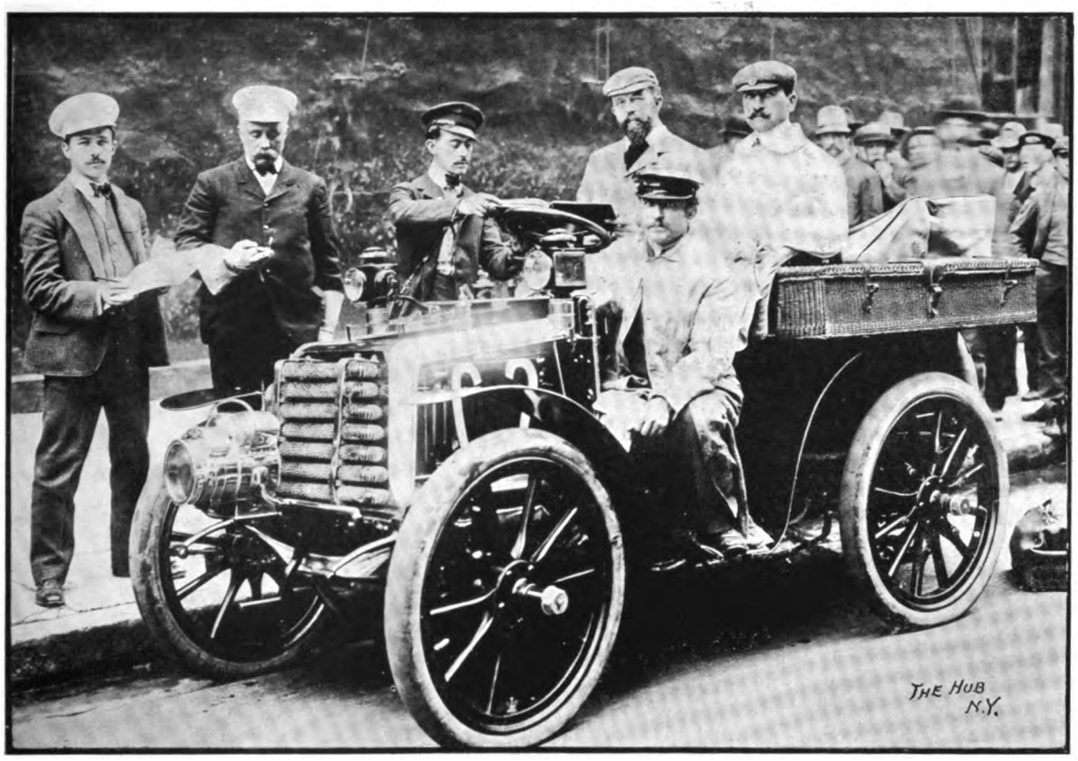
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The George N. Pierce Co.



One of the White Machines.



Albert R. Shattuck, President of the Automobile Club of America, and Vice-President J. Dunbar Wright as His Guest.



Packard Model, Ohio Automobile Co.



Grout Bros. Stanhope.

Automobiles in the Five Hundred Mile Endurance Test.

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Canada Motor Co.'s Twenty Passenger Break.

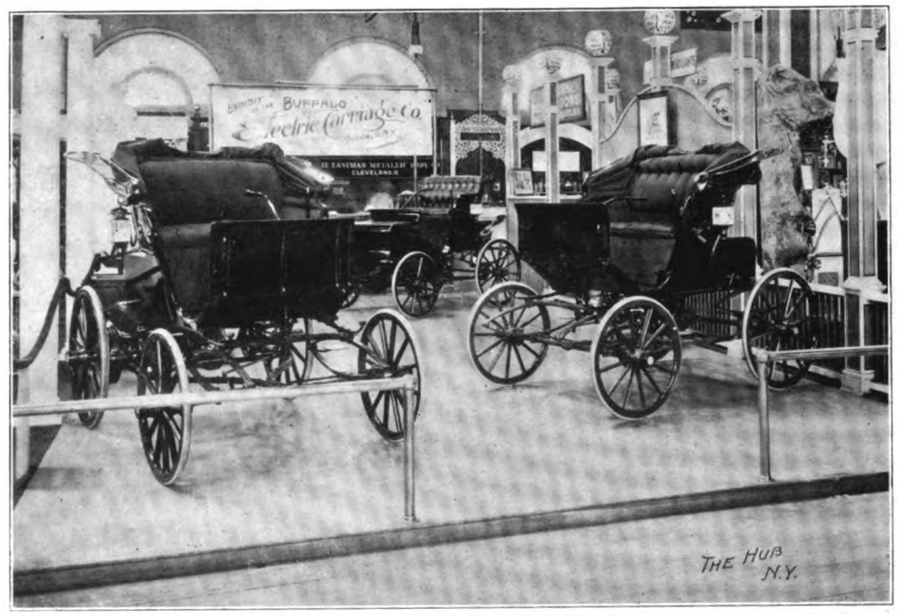
For description, see "Automobile Department."



Century Motor Vehicle Co. A Hundred Year Contrast.

For description, see "Automobile Department."

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The Buffalo Electric Carriage Co.'s Exhibit.

For description, see "Automobile Department."



The Conrad Motor Carriage Co.'s Exhibit.

For description, see "Automobile Department."

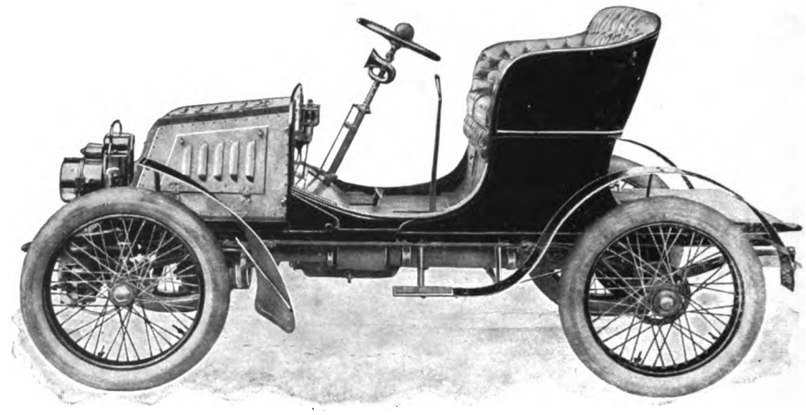


Grout Bros. Steam Wagon.

For description, see "Automobile Department."

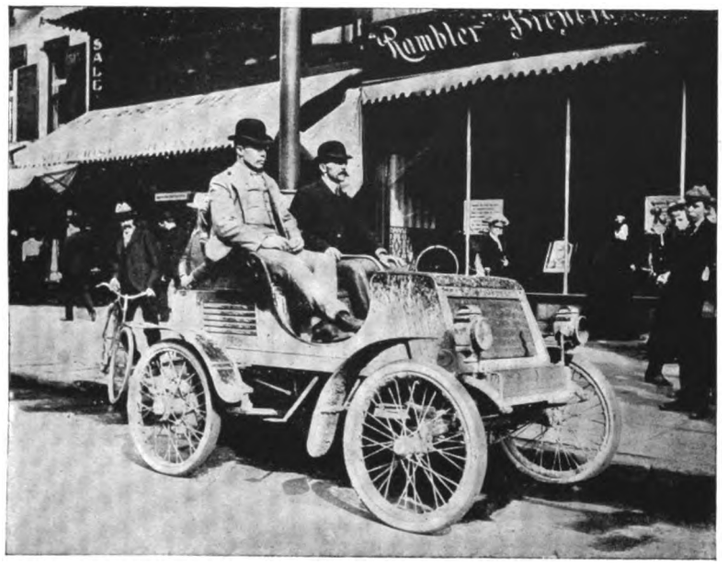
Exhibits at the Pan-American.

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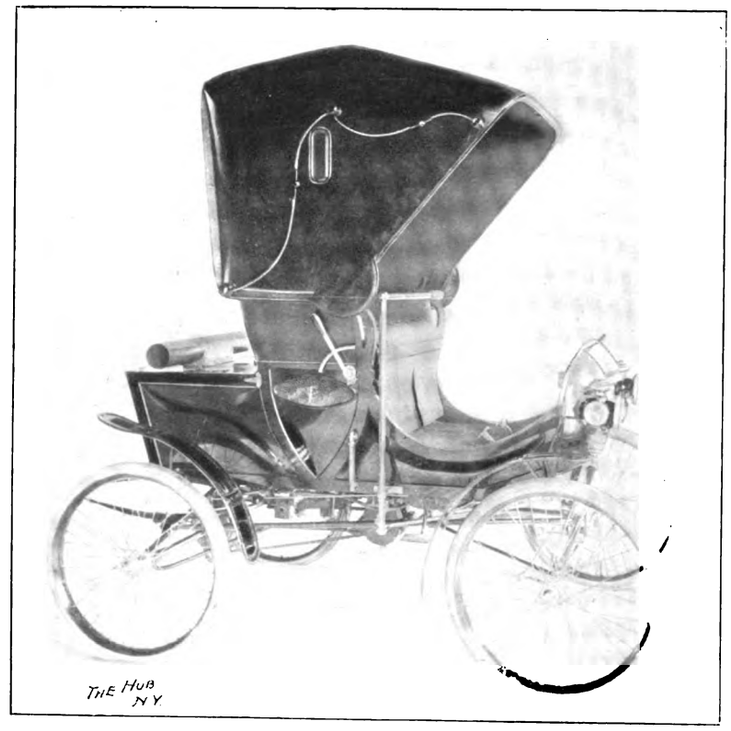
Peerless Manufacturing Co.'s Type 3,
Without Tonneau.

For description, see "Automobile Department."



Toledo Steam Carriage.

For description, see "Automobile Department."



Steamobile, Keene, N H.

For description, see "Automobile Department."

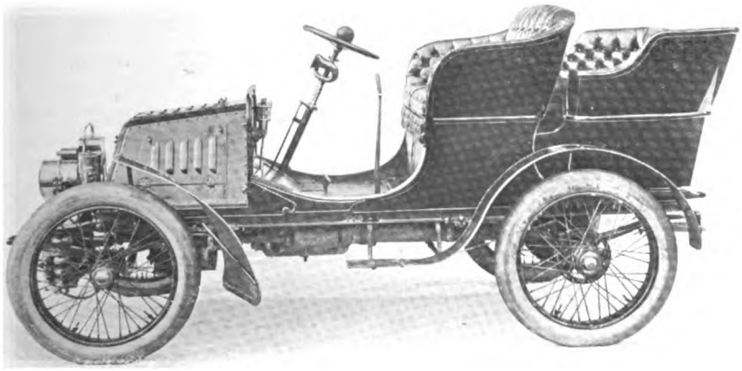
Steam Mobile Exhibits at the Pan-American Exposition.

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Crest Automobile

For description, see "Automobile Department."



The Peerless Manufacturing Co.'s Type 3, With Tonneau.

For description, see "Automobile Department."



American Bicycle Co.'s Toledo Motor.

For description, see "Automobile Department."

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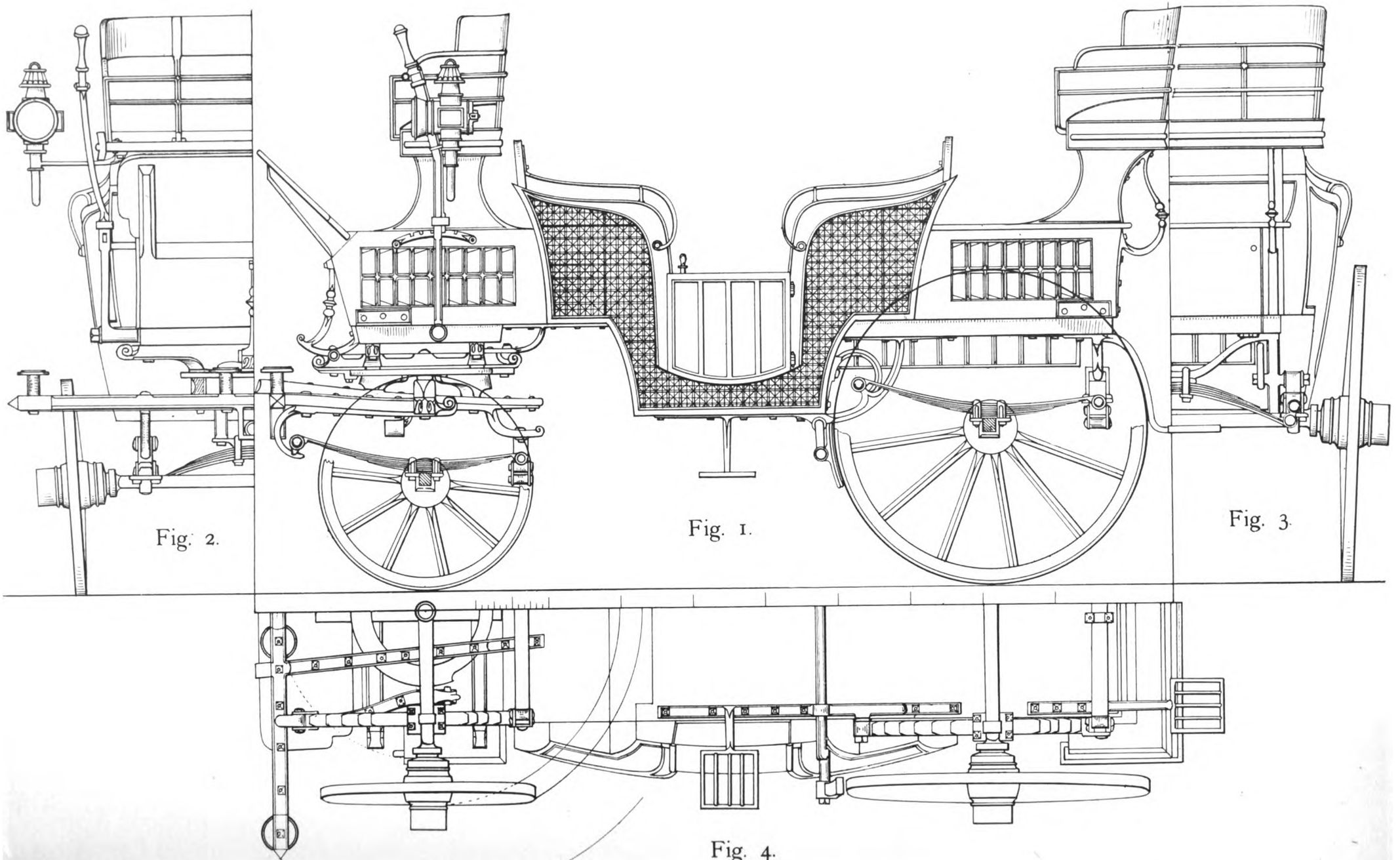


Fig. 2.

Fig. 1.

Fig. 3.

Fig. 4.

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CARRIAGE TECHNICAL DEPARTMENT.

Comprising the Wood, Smith, Paint and Trimming Shops.

WORKING DRAWING OF A VIS-A-VIS BREAK.

Scale, ⅝ inch to the foot.

(See Working Drawing on page 344.)

OUR working drawing this month illustrates a novel carriage of the break class, showing the body, its suspension on the springs, and location of wheels. The side view, Fig. 1, shows an eight-seated break with the weight as equally distributed on the two axles as possible, and with the front wheel placed in the most advantageous position both to carry load and for appearance and to accentuate the poise and appearance of the hind wheels, which are drawn to meet at one and the same time several different conditions, which is not very particularly noticed and pointed out in the description. Special invitation is extended to certain carriage draftsmen and mechanics, as well as to journal draftsmen and writers to these features, especially that particular group who assert that the body of a carriage is the foundation of all that is scientific in carriage building, without realizing that the slightest fault in the gears in quickly noticeable, and often condemns the whole carriage, and in hanging up the body, or in making the calculation for it, is just as imperative that we consider both together as it is with the wheel and axle.

The French builders of fine carriages, such as breaks and four-in-hand coaches, invariably set the front wheel and the axle back of the vertical plane of the center of the front seat, which necessitates an extra overhang of the body and the footboard of breaks similar to this, but mounted on a perch gear with eight springs, where the scientific difficulties present in this drawing are not in the way of hanging up the body on the eight springs with, a perch or coupling pole to steady them. In such a gear the perch pulls the hind wheels along. In this mode of suspension the body draws the hind wheels and sustains the equable poise of both the back and front gears, also sustains the level position of the pole and head bars. In the French mode of suspension the footboard overhangs the backs of the wheel horses. In the American mode of suspension, no matter the type of gear, the front seat is always poised back of the center of the wheel and the gear. We take it for granted that our readers are posted on the construction of English, French and German built carriages, which differ much from the American construction. But if our reader is not posted on the build of foreign made carriages then you are in no position to decide pro or con, and it is equally clear that you don't subscribe to carriage literature.

In an eight spring perch gear break or coach the fifth wheel is below the springs; in this break the springs are below the fifth wheel, which makes a great difference, as for instance, we sight the elliptic spring buggy, in which, if the fifth wheel was above the spring one can imagine the difficulties that would confront him, but if acquainted with the history of the American built carriage one certainly knows that there was a time when the fifth wheel was placed on the top of an elliptic spring instead of at the bottom of it, and that the difficulties then were overcome, and this on a single spring at the front and one at the back, and that on carriages to carry four riders as well as on buggies we cite the reader to other plans and to other methods, in order to more distinctly impress the mind with the suspension of the body on the gears of this light passenger break, weighing when fully equipped 2,800 pounds, in which the weight on the springs is stationed both high and low. The further away this weight is fixed the more unstable will be its structure.

The front axle is the fulcrum, the side spring is the lever, on which is impinged the weight that descends vertically through the center of the wheel, all of the weight of the front of the break being directly above and over the centre of the axle; of itself it passes always down in strictly a straight line. On this gear then its center of gravity is directly through the center of the kingbolt, axle and the hub of the wheel to the ground, at a point exactly below the center. The two points by which this given weight reaches the axle is that of each end of the side spring, wherein the two points are set each side of the axle unequally, the front head the higher and further away from the center of the axle, the rear head the lower and closer to the axle, and coupled to this head of the side spring is a cross spring whose length is equal to that of the two ends of the side spring. Now if the level of the front axle is to be maintained as drawn, then the center of the cross spring must move down the same distance as the front heads of the side springs, and this at the same time with the jounce of all the springs. Then the stress at all points of the gear will be equal, and in this way there will be no lateral stress or thrust on the kingbolt. Now the reasons why the front end of the side spring must be longer than the rear end are threefold: First, the elasticity of the front ends of the side springs must equal the elasticity of the cross spring; second, the weight on the back end of the side spring must be nearer to the axle than that of the front ends, so as to obtain a balance when the pole and leadbars are adjusted to the crane and socket, fixed to the drawbar and the coach bed; third, which is not a mechanical necessity, so as to turn the lower gear around to a short lock without interfering with a wide body and the fixed bar end of the upper gearing.

Now is the pressure on the front ends of the side springs the same as that on the rear ends? Are they subject to exactly the same stress? Will the front ends of the side springs when put to work tend upward or downward? These are the questions which must be answered before we build the carriage, as they are too expensive to answer after it is built, as we must know to a certainty. It is clear to the eye of experience and of practice, and also to a close observer, that the axle may when put into use become twisted out of a level bearing, and this without disturbing the proper poise of the gear, which will be supported by the broad bearings of the fifth wheel, but only for a short time. In order to put the proposition in a simple and a more comprehensive illustration, one that is more familiar to the ordinary mind, and one that will appeal to our common sense in a more convincing manner, let us illustrate the proposition with the common lever and block for a fulcrum, and by this means solve the problem of the action of the three springs in supporting the weight of the front end of the body. We will then take a bar, say six feet long, put a block of wood twelve inches from the weight to be raised, the block underneath the bar and the weight on top; if now at the long end of the bar we bear down upon it we can lift a great many times our own weight—more than six men could raise by hand. If the bar is ten feet long then we can raise just twice as much weight as we can with a bar that is five feet long. If the weight at the long end of the lever is less than that at the short end then the tendency of the long end is in an upward direction.

Let us suppose that we extend the front point of the side spring ten inches further ahead than it now is, and let the futchells of the gear follow accordingly, then when the body and load comes onto the gear, will not the result be the same? Is it not plain that the pressure upward against the drawbar is equal to the pressure downward against the head of the side spring? The center of gravity, or the center of the weight, remaining as here shown on the drawing. Clearly this is the principle upon which every gear should be built when the springs are arranged as on this gear. All fine trucks and omnibuses with this kind of gear, built in this country, are made on this principle. The principle then is, that the long end of the spring is counteracted by an equally long futchell.

The two inside futchells rest at the front end on top of the drawbar; the back ends rest on an iron head block that is clipped to the

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cross spring; the bottom plate is turned from the futchells down to the block and bolted to it; the outside futchells are framed at the front into the drawbar, at a point directly over the side spring; the back end is lapped into the end of the bottom bed, through which the inside futchells are mortised; this bed piece also receives the kingbolt; the top half of the gear consists of two cross bars that are bolted to the fifth wheel, on which the body rests; a nutter bar is framed into these two cross bars, through which the kingbolt passes; the gear is ironed in the regular way, the top half of the fifth wheel being welded to the bottom plates of the coach beds.

Height of front wheel, 35 in.; hind wheel, 52 in.; axles, 1¾ in. for 9 in. hub; distance between center of wheels, 7 ft. 10 in. Side springs, front, 40 in. long, 2¼ in. wide, arched on the main plate 2½ in.; number of plates, 6; gauge of steel, Nos. 2, 3, 3, 3, 4 and 5. Cross spring, 38 in. long, 2¼ in. wide, arched on main plate 5 in.; number of plates, 5; guage of steel, Nos. 2, 2, 3, 3 and 4. Rear side springs, 42 in. long, arched on main plate 3 in.; 2¼ in. wide; number of plates, 6; gauge of steel, Nos. 2, 2, 3, 3, 4 and 5. Cross spring, 42 in. long, 2¼ in. wide; number of plates, 5; gauge of steel, Nos. 2, 2, 3, 3 and 4; arched on the main plate 5 in. Hubs, 9 in. long; front hub, 7½ in. diameter; rear, 8¼ in. diameter; point band for front hub, 6 in.; back band, 6¾ in.; point band rear hub, 6½ in.; back band, 7 in.; length of point bands, 3 in.; of back bands, 1⅛ in. Size of spokes, 2¼ by 1¼ in.; depth of rims, 2 in.; size of tire, 2 by ⅝ in., beveled edge steel.

Length of body over all, 12 ft. 8 in.; height of body, not including the seat rails, 48 in.; size of outside seats, 17 by 52 in.; width across arms of center seats, 55 in.; at elbow, 46 in.; across bottom, 46 in.; width at each end, 38 in.

QUESTION BY A CARRIAGE DRAFTSMAN.

WHY do the French carriage builders as represented by "Le Guide du Carrossier" of Paris build their gears for heavy trucks with the axle under the center of the side spring, wherein the front point of the side spring is some 2½ to 3 inches higher than the top of the cross spring in the center? I assert that there never was a gear built having two side and a cross spring at the rear, coupled to the ends of the side spring, having the front end pivoted to the futchell or bar with the king bolt directly over the axle that would maintain a level poise under a moderately heavy weight. The back end will go down the axle with a tilt towards the back, and the stress on the gear will soon destroy its appearance so that it would have to be rebuilt, and the reason for all of this is that of the employment of the cross spring because the elasticity of this spring requires an equal amuont on the other side of the axle, which is the front ends of the side springs, and since they rise to a height of that of the cross spring at its center the half forward of the axle must be the requisite amount longer, so that the front of the gear will settle exactly as much as the back end does, and this in a natural way without stress.

IN THE MEMPHIS HARDWOOD FIELD.

THE hardwood trade of Memphis is moving along quietly, but on an even basis, and trade is about the same as it has been for the past six months. The demand for the different kinds of hardwood remains about the same, but a gradual change is taking place in the Memphis district, with the effect that dry stock in the hands of the millmen scattered throughout the country, which the large dealers consider trading stock, has been gradually moving until now the time is approaching when any one wanting anything in the line of dry stock, especially good quartered white oak, will be forced to negotiate with the dealers who have been holding their yard stock at an advanced price. Memphis is having a late spring, with heavy rains, and up to the present time very few mills, if any, have started sawing, and the dealers are inclined to think that with the additional scarcity of good white oak timber the trade is going to get into contact with the serious question of securing good, choice stock at anything like the prices they have been paying during the past six months, and this condition is looked for in the near future.

AN ORDER FROM VENICE.

THE Automatic Yoke Co. of Indianapolis recently received an order from Venice, Italy, although the only horse of the city is considered one of the sights by tourists, all trafficking being carried on by gondolas.

DESIGNS OF SEATS.

WE illustrate herewith three designs of seats seen at the Dealers' Exposition in Central Palace last month. Fig. 1 shows a panel

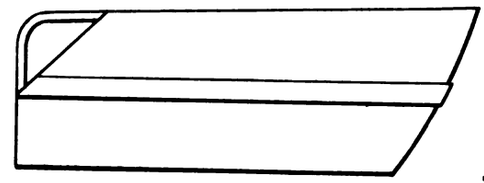


FIG. 1. SEAT PANEL WITH HEAVY CENTER MOLDING.

seat with a wide central bead worked on. The handle was of iron, the corner of the panel being cut away at an angle. This seat had black panel, the moulding being painted cream white. The square body

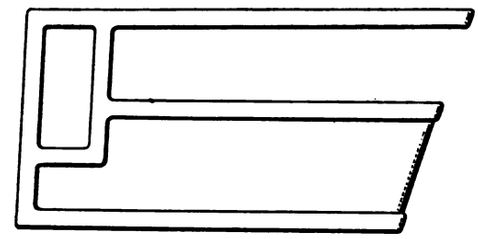


FIG. 2. SEAT END. LOWER SECTION PANELED.

on which this seat was used had a molding worked on the center of the panels, in the same manner. Fig. 2 illustrates a seat end with closed lower section, and an open upper without slats or spindles. The panel is sunken, all other parts are made up smooth. Fig. 3 illustrates a

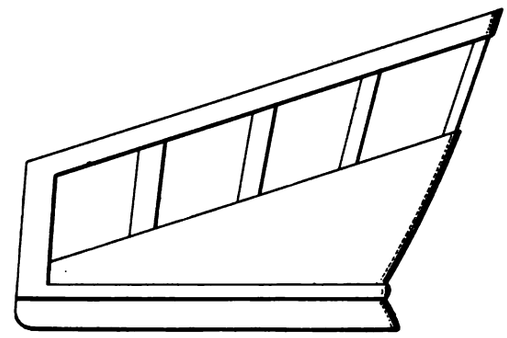


FIG. 3. SEAT END. UPPER SECTION SLATTED.

deep seat, light at the back with the lower portion panelled and the upper finished with graduated slats, the forward one being 1¼ inches wide. Then 1 in., ¾ and ½ in., in the order named. The front corner post was 1½ inches wide.

WAGON AND TRUCK BRAKES.

THE absolute necessity of brakes for wagons makes them an important fixture and any information regarding their construction cannot fail being of value. The essential features are a powerful and positive leverage and easy operation, together with ample strength. There are numerous styles of brake blocks which may be attached to all kinds of brakes, many of which contribute to greatly increase the efficiency of the brake.

We publish herewith descriptions and illustrations of three designs for wagons and trucks, representing some of the styles commonly used. Fig. 1 is more suitable for wagons than for trucks excepting where the latter have stationary racks. This brake we think is specially valuable because of its simplicity, and therefore is not liable to get out of order, and not so apt to rattle as the more complicated because of having fewer parts. The brake shown is intended for heavy vehicles, the same style of brake may, however, be adapted to light business wagons, with slight changes, viz., by dispensing with one of the rods A A, one being sufficient, and the upper section of the lever B. When constructing this brake for light use, in this manner, the smith should slightly twist the connecting rod C, so that the

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brake block on the side where the rod has been omitted should strike the wheel first, thus equalizing the pressure on both wheels. This can be done with twisting wrenches after the brake has been permanently secured, the smith using his own judgment as to the proper amount of twist or wind to allow. The following is a detailed description of this brake when made for a heavy vehicle: The rods A A are of ½ in. or 9/16 in. round iron, with a double eye on the front end, to connect with the arm D, and with a yoke, or clevis, on the rear end, with two or three holes therein, to adjust it for the wear of the brake blocks and tires. B B shows the levers to which the blocks are secured. The length of these levers depends much upon the height of wheels used. The center of brake block should in all cases be from three to four inches above the center of the wheel when the wagon is not loaded, so that the blocks may not be below the center of the wheels when the wagon is loaded. The upper section of levers B B should always be longer than lower, so as to get greater leverage. Make the levers B B of 2 by ⅝ in. iron and jump welded to the rod C, or secured by square socket and nut. They must be tapered on top to 1¼ in. wide and finished with an eye to receive ½ in. bolt. Forge the lower section with either a round or square shank, 1 in. in thickness to receive the block. A square shank is preferable when iron brake blocks are used, and should be made with a shoulder in collar on the inside of the block, and thread for the nut on the outside. When wood blocks are used the round shank is preferable, as a thread only is needed, without shoulder or nut, the block being screwed on

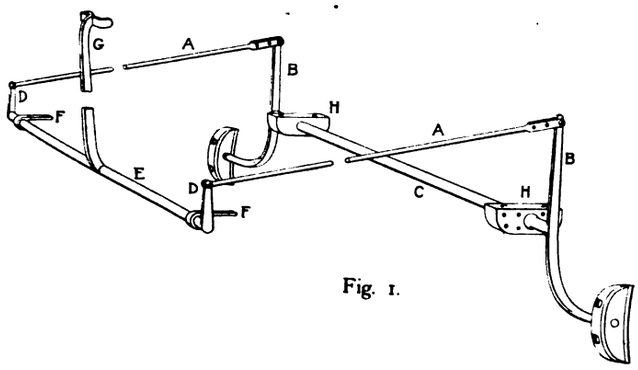


Fig. 1.

and can be readily adjusted to suit the dish of the wheel. Make rod C of 1⅜ in. round iron. If forged solid to levers B B, make it in two sections and afterward weld at the center to the required length. The arms D D, attached to rod E, should be from 6 to 8 in. in length, and either welded on or bent up from main bar. Make rod E also of 1⅜ in. round iron and secure it to the front cross sill of the body by the hangers F F. Make the foot lever G of 1½ by ½ in, iron and taper at the top to 1 in. wide. This foot lever can be placed either at the center or at the right hand side of the rod E, substituting arm D. H. H. represent wood blocks by which the brake is secured to the body at the rear. These blocks are usually made the same width as the sill of body and are plated on outside with 3/16 in. iron to prevent wear. An iron hanger is generally used, but the wood is simpler and less expensive.

Fig. 2 is a style of brake much used on trucks. The levers A A are made of 2 by ¾ in. iron and tapered about the same on ends as B B, Fig. 1. These levers are supported by hangers B B, which are made of 1½ by 1½ in. iron, bolted to the body sill. Make the rod C of ⅝

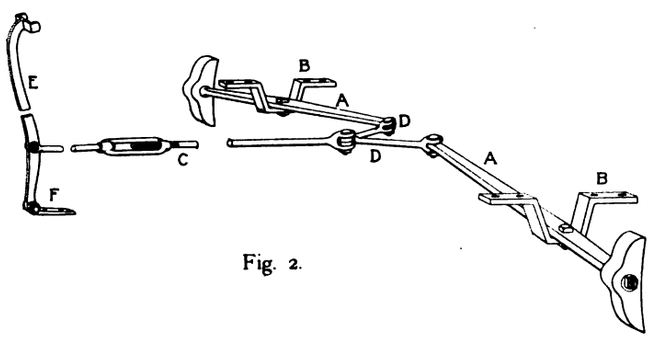


Fig. 2.

round iron. It is made in two sections with turnbuckle for adjusting brake, and connected to levers A A by rods D D, and to foot lever E, the same as in Fig. 1. Connect the lower end of the foot lever E by iron F, and fastened to either the upper fifth wheel or center bar of upper carriage part. It may be secured to the front cross sill of the body by a bracket when the fifth wheel is far back from front of body.

Fig. 3 illustrates another style of brake which we think very practical and also neat in appearance. The one objection to it is that it rattles more or less on account of having so many connections, which

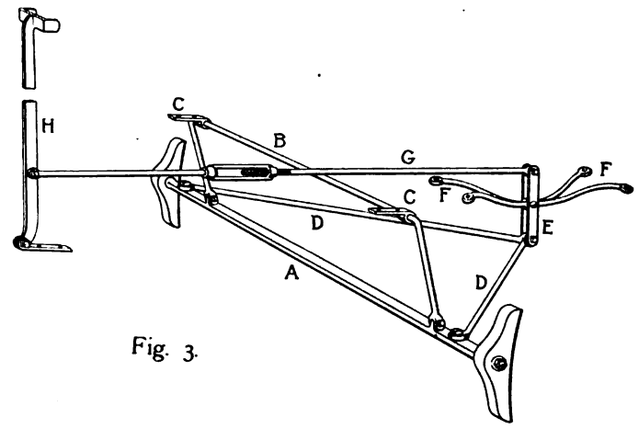


Fig. 3.

is probably the reason why it is not so frequently used as those shown by Figs. 1 and 2.

The sizes of the different parts are about the same as in Figs. 1 and 2. Bar A, to which the brake blocks are attached, is of 2 by ¾ in. iron. This bar is suspended from the body of the wagon by rod B, which is bent down at each end at a right angle, leaving the length of the horizontal part about the same as the width of the body, so it can be fastened to sills by irons C C. Rod B is of ⅝ in. round iron. The rods D D, which connect bar A to lever E, are of ⅝ in. round iron and welded to form one piece. The lever E is made of two pieces, as shown in cut, of 1¼ by ⅜ in. iron. This lever is secured by brace F, made in one piece of ⅝ in. round iron and bolted to bars under body. The rod G and foot lever H is the same as described in Fig. 2, and also the method of fastening foot lever on the bottom end.

PIVOT CROSS SPRING COUPLING BAR.

In our October number we illustrated a market wagon that is popular among truck farmers in the vicinity of New York. The build-

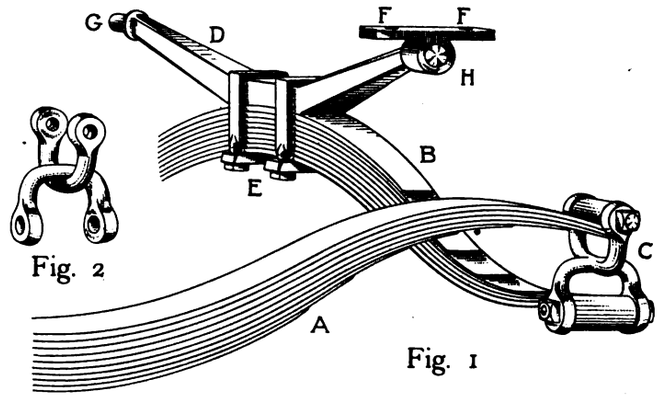


Fig. 2

Fig. 1

PIVOT CROSS SPRING COUPLING BAR.

ers of this wagon are Donnigan & Nielson, of Brooklyn, N. Y. They have a method of the front and rear cross springs that has given marked satisfaction, and which may be new to many readers of The Hub. The diagram herewith clearly illustrates the feature mentioned. Fig. 1 shows a sectional part of the cross and side springs and the pivoted bar to which the cross spring is bolted. The various parts are A. the side spring; B, the cross spring; C, solid shackle that connects the cross and side spring ends; D, pivot bar to which the cross spring is clipped, this bar taking the place of the head block so generally used; E, clips securing pivot bar D to the cross spring; H, eye for pivot and lug attachment; F, holes for the bolts used for securing the pivot eye to the hounds; G, end of pivot bar without the eye plate.

The object aimed at by this attachment is to provide for the elongation of the side springs produced by being loaded, doing away

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with the twist that is sure to occur when the solid shackle is used. But the natural query is why provide for the elongation of the side springs and not for the cross spring. The loose shackle, Fig. 2, makes a connection that provides for both springs, but it is disliked by many builders for their looseness, propensity to rattle and weakness. Fig. 3 illustrates a shackle that has the same quality of rigidity as the solid shackle, and at the same time has a loose section, and if used with the pivot bar in Fig. 1 will provide for the elongation of the cross as well as the side spring. The lower section A, is made with two lugs, B, forged up solid on the top of the clips, C. The upper section has an eye in the centre and is milled to fit snugly

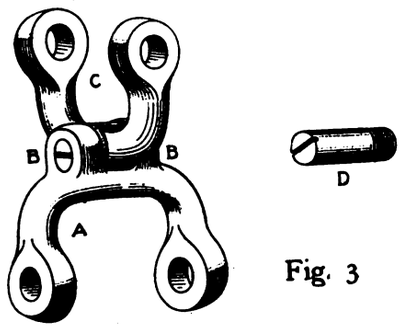
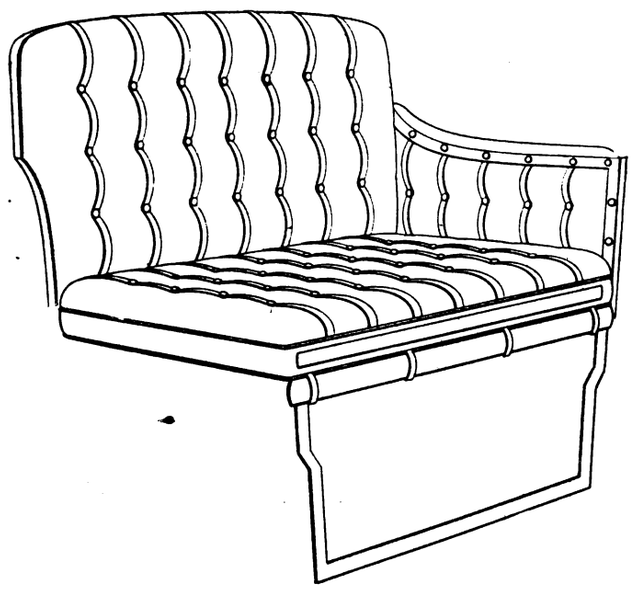


Fig. 3

between the lugs B, and secured by the steel bolt D; this bolt being threaded into one of the lugs and provided with a slotted end, by which it can be screwed into place by a screw-driver. This does away with the bolt head and loose nut, and being of steel the bolt will not wear out quickly.

A NEATLY TRIMMED SEAT.

Our illustration represents a style of trimming seen at the exhibition of finished vehicles in New York, last month. The feature of this trimming is the narrow plaits that extend downward across the back and quarter, and across the cushion. These welts are made



A NOVELTY IN TRIMMING.
(See also Fashion Plate No. 529.)

by folding the cloth and stitching with a machine across on the line of the plaits, about ⅞ of an inch from the edge of the fold, and then spreading out the cloth and setting down the plait, so that the joining seam is in the middle on the under-side, leaving a plain plait, with both sides folding over the cloth. The tufts and the securing of the ends maintain the plaits in their proper position. The carriage illustrated by plate — in this number was trimmed in this way.

DESIGN FOR CUSHION FRONT AND FALL.

Fig. 1 illustrates a design for the cushion front and the seat fall. Make the cushion on a wood frame, the facing does not require to be made stiff. The small figures on the facing are cut out of top leather and pasted on thin canvas. Make the fall on a stiff rough lining, cut the border and the center pieces out of top leather and paste to the rough lining. The entire surface of the facing and the fall must be pasted over and creased down around the reinforced pieces.

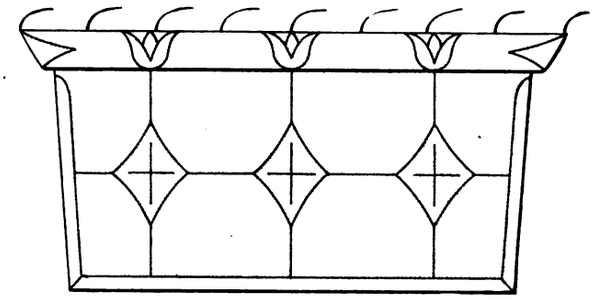


FIG. I. DESIGN FOR CUSHION, FRONT AND SEAT FALL.

Cut the leather for the fall large enough to turn over the edge and take the inside line of stitching around the border.

DESIGN FOR A RUNABOUT BACK.

Fig. 1 illustrates a cheap and neat design for a runabout back. Make the back on a stiff rough lining, lay it off as shown. Space off the roll which forms the border around the back, two inches wide; lay off the design, between the roll in proportion to the length and width of the back.

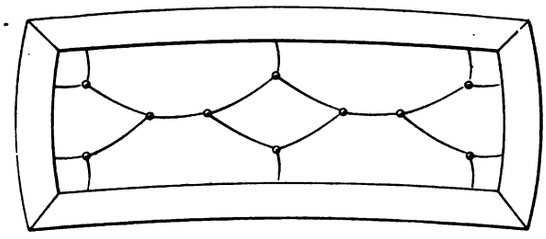


FIG. I. DESIGN FOR BACK TO A RUNABOUT.

In laying off the material for the squab part of the back, give ⅛ in. fulness between the tufts each way, fold the goods along the tuft lines on the wrong side of the goods and stitch near the edge of the fold on the machine. The inner edge of the roll has no cord welt between it and the squab, it is simply fastened to the rough lining with thin pieces of wood molding. Fill the roll with wadding. Finish the bottom edge of the roll on the bench, and bind the edge with pasting lace. The rest of the work can be finished on the bench.

THE OUNCE OF PREVENTION IN THE PAINT SHOP.

In every age and clime the ounce of prevention has figured as a large factor to be reckoned with. In the carriage paint shop it daily plays its part, and its benefits are proportioned to the amount of prevention applied to the seemingly commonplace affairs.

Lack of room, for example, not infrequently makes the cost of painting a vehicle so large that profits are swallowed up by the expense account. The paint shop from time immemorial has been fairly crying aloud for greater working and storage space. This needed additional space is the long sought for ounce of prevention to be used in making the paint shop pay. A little extra effort, shrewd planning, a bit of stiff Western enterprise, will develop the roomier shop. And then, behold! the ounce of prevention has removed the need of a pound of cure.

Buying stock has long been a matter over which the most enterprising painters have met in ardent confab. One argues in favor of buying as the daily needs suggest. Another seeks to anticipate future wants by carrying a constantly full supply of paints and varnishes. He buys stock upon the military theory, "In time of peace prepare for war."

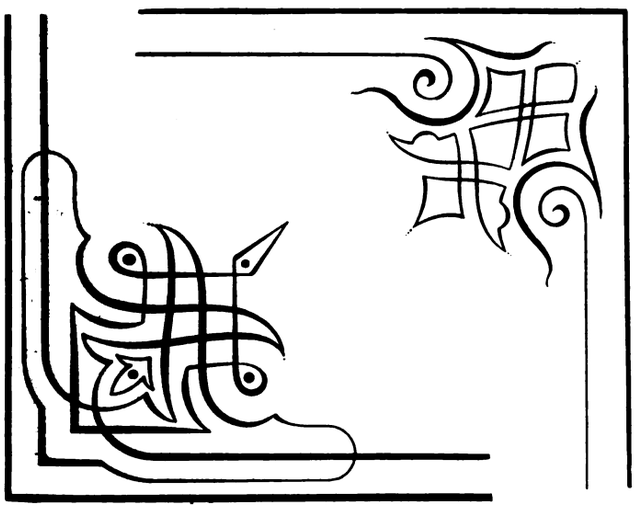
Reckless buying of stock is to be discountenanced at all times, but a supply of paints and varnishes adjusted to the shop's normal consumption one month with another is as necessary upon the shelves of the establishment as a rain proof roof is necessary over it. Maintain a

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good moderate supply of materials, complete at all points. This supply invites eternal vigilance, to the end that no single item of material is consumed before an order for a new supply to replace it goes forward. Thus prevent the occurrence of a shortage at an unforeseen busy time, and the consequent purchase at the local dealer's of an inferior article with which to meet the emergency.

Many a surface has gone down to premature decay through the use of an inferior paint or varnish; such use becoming unavoidable by reason of the painter's reluctance to keep his stock intact and buy in advance of his requirements.

In the matter of shop equipment the modest ounce of prevention appeals forcibly to the painter. The windows need strong, workable curtains or shades to shut out the sun's fierce rays at times. Failure to provide these has cost the painter many a blistered job, or a job



CORNER ORNAMENTS.

weakened in its undercoatings, or adversely affected upon its outer raiment. Glass acts very often as a lens through which the sun's rays focus disastrously upon a newly painted surface. The power of the sun's heat when concentrated upon a glass is illustrated by the recent experiment at Pasadena, California, as related by Prof. Thurston of Cornell University, wherein an enormous concave mirror (kept in its relation to the sun by an astronomical clock) concentrates the sun's rays on a steam boiler, and thus runs a ten-horse power engine! In view of the above, as applied in its minor force, even to the paint shop windows, is not the ounce of prevention desirable?

Since the ancient days until quite recently "spontaneous combustion" has been more or less of an uncertain quantity in the painter's court of discussion. But the actuality of the thing has become so assured that practically all painters are agreed as to its existence. Spontaneous combustion originates in oily, greasy waste or rags. Why not expend the ounce of prevention in the purchase of a few metal buckets or tanks in which to throw the oil and grease refuse, and easily ignited material generally?

Your daily paper recounts tale after tale of spontaneous combustion and a business gone up in flame and smoke. The spontaneous combustion that occurs in a galvanized pail or bucket harms nobody and cheats the newspapers out of a scare headline. The cost of a few trusty metal buckets for the storage of inflammable waste or rags is cheaper than an inadequate insurance policy and a paint shop reduced to ashes.

Precautions against fire directly and essentially concern the paint shop proprietor. He can ill afford to neglect the most stringent provisions for the prevention of fire. The writer has for several years been connected with a paint shop in which, during the busy season, 140 painters are daily employed. In this establishment is a fully organized hose company. A complete equipment of pails painted a blooming red and stenciled "For fire only" is ranged at convenient distances about the shop. Axes, pike poles and hooks, etc., are also provided. In point of fact, a good working, fire fighting apparatus is accounted among the profit paying shop tools belonging to the business referred to. If a vast aggregation of capital deems it a paying investment to thus provide against one of the most dangerous enemies menacing the paint shop, how can the owner of the small shop, with perhaps all his financial resources invested in his business, afford to neglect such a comparatively inexpensive means of dealing effectively with a possible conflagration? To-day more than at any other time in the history of business it becomes the servant of the public to make himself known. The painter conducting a painting business is no exception to the rule. "By their works ye shall know them" applies both to the painter's work in painting and to his work in advertising. Advertising is the science of making business grow where it had not grown before. To the painter advertising is the ounce of prevention which serves to keep the public eye rivited upon his business.

No painter can afford to neglect advertising judiciously in the local newspaper. While advertising does not specifically create needs it does often make people aware of their needs. The advertisement which calls attention to an article also makes the reader realize that he wants it. And this, in a word, is the pith and point of advertising. It has been said that advertising is the business painter's salavation. Then why neglect it?

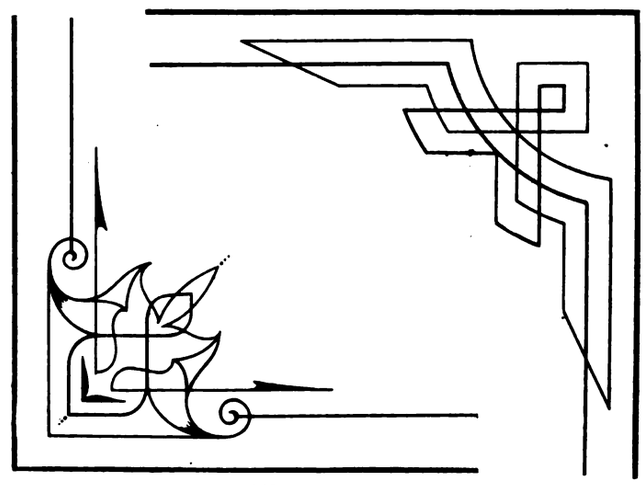
Perhaps the shop is in need of repairs before fierce winds and the biting atmosphere of the cold months come. Better make them now. Such repairs may constitute the ounce of prevention which shall save the ton of coal later on. Then consider the comfort of working in the tight, clean warm shop. In such surroundings the earning capacity of the workman is enormously increased over that of one compelled to toil in a chilled, uninviting shop.

Have you need of more labor saving devices in your business? If so, the present is an opportune time to provide for an increase of the equipment. Competition is more strenuous than formerly. Labor saving devices increase the earning power of the shop, and render competition less formidable. Sure enough the ounce of prevention comes very close to being the painter's best friend.

ROUGHSTUFF. PREPARING, APPLYING AND RUBBING IT.

Said a well known carriage painter recently: "If anything, the quality of carriage painting is deteriorating because, as painters, we are emphasizing the importance of the varnish coats overmuch, and the value of the roughstuff foundation not enough."

The above estimate of a certain trade condition has a very sure basis of fact, and it undoubtedly affects the quality of surfacing now being turned out. At any rate, some of the great city repositories of the country have within the last two or three years shown such glaring examples of impoverished foundations supporting elegant color effects and faultless varnishing as to arouse newspaper comment. Hence the charge of neglecting the roughstuff coats would seem to pass unchallenged.



CORNER ORNAMENTS.

It is possible at the present time to purchase roughstuff in a finely prepared state, and ready for immediate use, at a price which under ordinary circumstances, would seem to fully justify the economy of the purchase. A very great number of carriage painters, however, prefer to mix their roughstuff as needed, offering as a reason therefor the statement that shop prepared roughstuff can be made to suit the needs of the differing classes of work—made quick drying or slow—and a more uniform grade of results thus secured.

The chief essential is to get the pigment ground fine and all the

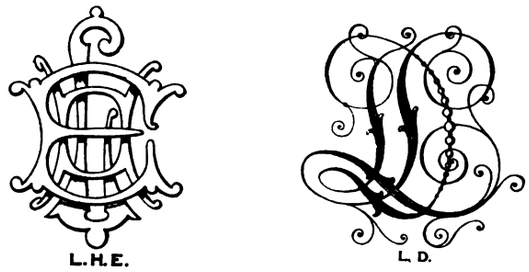
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ingredients beaten in thoroughly. Coarse, dirty and imperfectly mixed roughstuff is worthless for fine surfacing. For average work, as it comes to the jobbing paint shop, the old reliable standby made of equal parts, by weight, of filler and white (keg) lead, and dressed to a thick paste with quick rubbing varnish and coach japan, and then thinned to a brushing consistency with turpentine, stands unsurpassed. Amid good drying surroundings this roughstuff can be applied at the rate of two coats per day.

For slower work use 3 pounds of filled to 1 pound keg white lead, beat compactly together, mix to a stiff paste with rubbing varnish and japan. Thin to proper brushing consistency with turpentine.

For landaus, broughams and fine coach work generally use 5½ pounds of any first class American filler to 3 pounds of keg white lead; also, 1/3 elastic rubbing varnish and 2/3 best coach japan. Make into heavy paste and thin with turpentine. Apply a coat every third day, and if possible do not rub out short of three weeks' good drying.

The application of roughstuff should be in the hands of skilled and experienced painters. It is a costly error to assume that anybody can apply roughstuff. Concededly anybody can apply the pigment, but only a first class brush hand can apply it right. Roughstuff should go to the surface a trifle heavier in body than ordinary lead or paint coats, but it should flat out absolutely free from brush marks. If it fails to do this the body should be reduced with turpentine, for the fact is past the hour of argument that brush marks in the roughstuff cannot, under the most scientific touch of surfacing, be effaced. In other words, the brush mark in the roughstuff grows in size and increases in prominence as the finish is reached, and for the job's full length of service is indelibly engraved upon the surface. The consistency of roughstuff, then, as it goes to the surface, is a fine point to be determined by the painter. Only an experienced and expert surfacer is capable of judging in this matter.



MONOGRAMS.

The surface once carefully puttied and brought up to the full number of roughstuff coats, deserves exceeding care in rubbing out. Here, too, the bungler and the incompetent should be conspicuous by his absence. Only the workman who becomes deeply interested in his business, whatever for the present it may be, is fitted to rub roughstuff in a way to win a carriage lover's ransom.

The old time pure lava pumice stone has been practically supplanted by the German rubbing brick, Eureka rubbing stone, etc. These prepared substances, to be had in various degrees of fineness, have the merit of holding intact until worn out, whereas pure pumice stone becomes soft and crumbles and works under the black to the injury of the surface.

Rubbing roughstuff consists not in merely scouring the stain coat out of sight, but in getting a fine, smooth, and, above all, level surface. Avoid circular rubbing strokes. Rub with long, full arm strokes, straight out and back. Rub putty spots, which are usually harder than the roughstuff, down level with the remaining surface. Rub, in short, to a uniform perfect surface.

W. A. PATERSON CO. CATALOGUE.

We have received from W. A. Paterson Co., Flint, Mich., a copy of their 1902 catalogue illustrating the styles the company will furnish during the coming year, and their terms. This catalogue contains about sixty illustrations of vehicles of the standard types manufactured by this company. The illustrations are high grade and styles of vehicles such as will please the general buyers of buggies, top and no top, phaetons, surreys, no top, canopy and extension top. The printing is high class, paper fine and cover ornamental in character in stone gray, printed black and white to give a light gray effect. This is a good catalogue to have and to keep.

CARRIAGE AND WAGON SERVICE OF HAWAIIAN ISLANDS.

HORSELESS VEHICLES AND IMPROVED TRANSPORTATION.

On the stop over at Honolulu for a week, on the return trip from the tropical climates to America, I was agreeably surprised to observe the advancement which had been made in vehicle transportation since last visiting the islands. I was in Honolulu two years ago, at a time when traffic by carriages and wagons was defective. There were not many modern conveyances at the time and the accommodations were poor. The livery stable people have lately opened some very good establishments and they have fitted them throughout with fine carriages. I called at the establishments of the leading livery men and observed that much of the custom was from tourists. There are always many foreigners in and about Honolulu, who are desirous of riding about viewing the interesting points. These people pay well for the carriage service, and the proprietors of the stables earn rich returns from their investment. Some of the stables are of excellent construction of artistic stone work and native masonry. The roomy apartments are provided with all of the conveniences of the business. The old fashioned vehicles have been sent to the interior localities or to other islands, and in many cases have been destroyed. The only poor service is with the line of omnibuses which run from a point in the city of Honolulu to the suburbs. These 'busses were made a quarter of a century ago by the natives and aside from the wheels, which were usually imported, the wagon is made from such materials as it was possible for the native smiths to procure. The sides and roof of the 'busses is of boards. The 'busses from a distance look like little houses on wheels. They are drawn by four mules or horses and do quite a trade.

For a city of the importance and enterprise of Honolulu the present railway line which threads its rails through all of the principle streets, is very poor. The accommodations are so inferior that very many persons will not ride in the little stuffy cars, preferring to walk, to ride wheels, automobiles, or own a carriage. There are very many miles of country covered by this railway line, and the present owners are doing the best they can with the rails. I know that when I was here before some of the rails appeared to be flat strips of metal nailed to wooden pieces. Now they have all iron rails and the tracks are in better condition for service. But it is a narrow gauge road and the little cars are very poor ones. They have been in use in other countries for many years previous to shipment to the Hawaiian Islands. They are patched and worn. The journals are grooved and scored, and boxes heat and throw oil. The windows are broken and the doors will not work. The cars have not been painted for years and they are in a bad condition generally. The power system is derived from mules and horses, and some of the smallest cars are drawn by one animal. There are no conductors and the fare is paid into boxes. The inducements to travel on this road are so few that most of the travelling public arrange to get about by other means. Carriages and wagons are in demand to a greater extent owing to the poor railway accommodations. The horses for drawing carriages and wagons in these islands are a very superior type, the best I have seen for a long time. I found that the horses of the Philippines were weak, small and unsuitable for carriage service: Those in Nagasaki and other far eastern points were of the great, awkward, lazy type of Russian horse that is almost useless for light carriages. But the Hawaiian breed of horses is excellent. The noble animals are beautiful to look upon and they are exceedingly serviceable in both light and heavy vehicles.

The condition of the thoroughfares of a city, town or country, of course, have considerable to do with the prospects of extending carriage and wagon service. So far as the roads are concerned, those in and about the city of Honolulu are excellent. I rode for hours and hours over the finely graded roads which the people have of late built way into the hills. Every foot of these roads is graded and finished for practical service. There are hundreds of owners of vehicles who make a business of securing trade from touring parties which are frequently here, and one meets with these parties in all parts of the mountains. This traffic has been so profitable in recent years that it has been a paying investment for the authorities to put in excellent road service. The streets in the city of Honolulu are paved and finished in good form for practical service. In fact I was never in a country where the roads are better and the city streets maintained in such good shape. Large quantities of crushed rock are used in the building of the Hawaiian roads. There are great rock

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stamping and crushing machines in service in several points about the city. One can see great rocks crushed and the pulverized material shipped to other points in the islands for use on the roads. The pulverized stuff is used for the top, and by properly wetting and rolling, an exceedingly good surface is obtained. There are gangs of convicts in striped clothes kept at work on the roads all the time. I saw no women at work breaking stone, as in some of the far eastern countries. All of the work is done by machinery, and by male labor. The bridges of the country have also been vastly improved upon. I know that when here before, that many of the bridges were dangerous to use. In some crossings the logs were arranged parallel and in such a way that the wheels of vehicles could slip down between them. There are now iron, arched stone and good wooden bridges in use.

Large numbers of carriages and light vehicles in general have been imported into the islands recently, and the market is well furnished. I am informed, however, by parties who handle vehicles, that the demand for express wagons, farming wagons, trucks, and the like, is in excess of the supply. There has been a large amount of constructive work in progress lately, and from what your correspondent could see from general observations, there is even now a vast amount of engineering and building going on. I saw new buildings going up at every corner. There is a building boom in progress and it promises to last for a few years. Shops and mills are under way in several locations. All this sort of work calls for the service of many wagons for hauling materials. There is not nearly enough heavy vehicle property available to keep the contractors supplied, and I was told of several instances in which work was delayed owing to this one trouble. I saw that in some cases stones and kindred building stuffs were hauled through the streets on drag sleds made from planks, because the contractors were unable to secure proper conveyances. The prices on wagons have therefore gone up. It is presumed that orders to the wagon builders of the United States or other countries are under way, and that some wagons are en route for the islands. But the present state of the heavy wagon market is depleted.

Reference should be made to the domestic works for the building of vehicles. There are several good sized manufactories in which carriages and wagons are made to order. I called at some of these establishments and found that they were fairly well equipped for the turning out of vehicles according to any pattern desired. When here before the one or two shops had but very little machinery to work with, but these new shops have been furnished with full sets of necessary apparatus for doing the carriage and wagon constructive and repair work of the country. Orders for building wagons and carriages are numerous at present, and the works are doing a good business. One plant is running at night in the wagon departments.

Many prefer the imported carriages. I know of instances in which dealers handle only the imported patterns of vehicles, and they are doing a good business. Buggies, hacks, carts and in fact all descriptions of vehicles are in good request. The manufacturers of carriages are also doing well, and they make a pattern of open carriage which sells freely to the people. Prices are not excessive on the vehicles of any kind, but they are as a rule higher than American values. Profits are stated to be liberal, and from what I could see the manufacturers and dealers in vehicles are earning good money. The people of the islands do all they can to encourage home industry, and they will patronize home manufacturers of vehicles, providing the vehicles are just what they want, and the prices are right. Otherwise they choose the foreign goods.

The Honolulu Automobile Co. has been formed and has had its one hundred or more electrical and gasoline vehicles in service for quite a while. There is a lively demand for the services of these horseless carriages. As one embarks from the steamer he is confronted by several drivers of the automobiles, who will take him anywhere at the rate of one dollar per hour. There are automobiles distributed at the street corners and at public places, where they may be hired any hour of the day by customers. There is much traveling in progress about the scenic roads of the islands and the motormen do considerable business. The automobile company pays very well.

The matter of shops in which carriages and vehicles of all kinds can be repaired is of course of considerable moment in any country. I found that the wagon repair shops of the Philippines were woefully deficient in machinery, tools and workmen, and that botch work was the rule. Your correspondent noted that the repair shops of the empire of Japan were but little better furnished and much imperfect work was being done on all the mechanism of vehicles. In Honolulu, however, there are some very well fitted repair shops in which carriages of all types as well as wagons, automobiles, bicycles and the like can be repaired. There are foundries here in which one can get any part of the metal work of vehicles made. Iron, brass, copper or any metal is melted and cast to desired patterns, which is a great convenience to the carriage shops. Then there are nickel plating establishments in which the plated work of vehicles can be restored when required. There are also enamelling shops in which the black work of the vehicles can be treated.

The greatest difficulty is in getting small supplies such as bolts, screws, nuts and light hardware for carriage and wagon repairing and constructing purposes. There is a good field here for the opening of a department in which carriage hardware can be handled. There are hardware stores here that carry full lines of builders' hardware, but they do not make a specialty of carriage hardware. There are machine shops in operation in which the machines are in shape for turning or planing and special parts needed in the repair or making of vehicles. There are also leather works from which one may purchase leather stock. The woodwork of the vehicles is grown in forrests where hard woods are available in moderate lots. There are some good working mills here for reducing the stock to the desired sizes. Recently stores have been opened in which coach colors, varnishes and oils are sold. There is also an agency here that deals entirely in lubricating oils for machinery and vehicles, and this agency carries lines of greases and oils adapted for carriage and wagon axles. Of all the tropical countries visited by the writer this one seems to be the best for the development of the vehicle field. There are very many wealthy persons in the islands who desire to own costly outing outfits, and they do not hesitate to pay large figures for what they want. Very many of the higher classes of families are interested in the profitable sugar mills, the pineapple farms and the rice plantations, from which immense returns are secured every year. These people are used to expending considerable sums of money annually on vehicles, and I know of several cases in which new carriages were purchased each year, so as to keep up with the improvements.

It may also be stated that this is a great country for bicycles. The streets of the city of Honolulu and the roads of the country places seemed to me to be overrun with more bicycles than one is accustomed to see in American cities and towns. There are bicycles everywhere and the prices are not a bit higher than in America. There are numerous agencies and the competition keeps the prices at a low ebb, although I understand that all of the cycle people are doing a good and profitable business.

HAWAIIAN CORRESPONDENT.

DETRITUS.

IN every city there are regular markets where there are assembled, periodically, the merchants and the buyers of the worn and the cast off. There is nothing, however mean and inconsiderable it may be, that will not find in these places a market and a value. In London, a city with the population of a country, there are several such markets, and the chief of them is that one held on a Friday in the great space of the Cattle Market, belonging to the corporation of the city of London in the north of London. This market has been held weekly for an almost unknown period, first in Smithfield within the precincts of the city and then following the live cattle market, when that was transferred to the new ground on the northern heights. Here are gathered together representatives of every race of mankind, buyer or seller, or looker on. Outside the gates, in adjacent yards, horses newly imported from the stock farms of the States and Canada and from the steppes of Russia are dealt in and change hands at prices ranging from a five pound note to fifty times that amount. The things gathered together and laid on the ground or against the fencing of the cattle pens, are of every description and no small proportion has passed through the hands of the carriage builder and the wheelwright. Here lies much that has seen service and which might have expected honorable burial in the melting pot to be reincarnated in more modern form, reserved for further service and condemned to continue playing a part, until worn out material gives way, and then is the tragedy of an "accident." Springs eaten up with rust, worn axles, chrystalized with use until they are as brittle as glass; with the collars and washers so worn that they will hardly hold in their places, collinge axles the nuts wanting threads and squam, being cleaned, examined and turned over by someone too anxious for a bargain to reek the lives he is risking on the purchase; ironwork for every purpose from all sources, steps new and old, many looking as though they had been found before they were lost and had

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disappeared for a time to reappear here in the company of others worn in honorable service; dash iron, stays and scrolls, fore, carriages with and without springs, bolts by the bundle, and nuts by the yard, on string, may be selected here and bought in any quantity for any price at which a bargain can be struck. Woodwork is at a discount; it is to be had in the finished article, complete, decorated and literally as "fresh as paint" and as uncertain as to age and probable wear as many another painted thing. Lamps there are in all the styles of past days, even to the old square double-bodied lantern with sliding glass panels of an age when tin was cheaper than glass even of the commonest and the loss by breakage an item to consider down to the very latest in white and yellow metal and heavy beveled plate, a pair of which does not equal in weight one of the older ones and cannot hope to equal it in service. Leather and linings, stripped from landau and brougham, cushions in all shapes and sizes and colors for all sorts of carriages. Fitments of every description almost new and old are assembled here.

Inside and outside the gates are rows of carts, vans, traps of all sorts and on the center pathway, eager sellers are racing nags, attached to ramshackle traps up and down, to show their paces to cautious buyers and in the afternoon there may be seen crossing London jubilant getters of bargains, driving a nag in the trap with the chalked "for sale" half obliterated on the shining panel and a string of two or three "ponies" trotting behind; and also the disappointed seller taking home again his goods which will reappear week by week until finally disposed of. Where there are horses and carriages there must be harness, and there is no exception here, every sort and size in all conditions, the once smart pair or single set, which has been given or left to the coachman, to the most dilapidated, even to an old horse collar, which had been cut down to suit an ass. Leather straps from which all the nature had long disappeared, still figuring as rein and traces, to contribute some day, when trusted, their quota to the comedy and sometimes the tragedy of London traffic.

These things could not be dealt in where there is a young community. It is only amongst the old that aged things are reverenced. For it is only the regard for antiquity that could support such a market, new and better goods could be purchased for very little more, but no, the old, the worn, the has been, holds the market and draws the crowd, the instructive reverence of a people for that which has stood the test of time and wear. No light thing this, the appreciation of one's best efforts, it may come personally when the maker is dead, but he feels its impulse when living and working, and it urges him on to put his best into what he is doing, and it is enough that once his work was put to honorable service, however mean the use may be when its pristine beauty has gone.

IMPLEMENTS AT THE GREAT FAIR.

VIEWS OF MANUFACTURERS UPON THE EXHIBITS OF FARM MACHNIERY, IMPLEMENTS AND WAGONS AT THE LOUISIANA PURCHASE EXPOSITION, ST. LOUIS, IN 1903.

We extract from the report of the Local Implement and Vehicle Board of Trade of St. Louis, Mo., to Paul Brown, chairman of the committee on agriculture, St. Louis World's Fair, the following extracts relating to the farm machinery and implement trade upon the question of making an adequate exhibit at the World's Fair in St. Louis in 1903:

The manufacture of agricultural implements and farm machinery is, in our judgment, of sufficient importance to entitle it to a special building of its own, or what might be as satisfactory to most manufacturers would be to have agricultural products, implements and machinery exhibited in one building. To do that a very large building would have to be provided. Our agricultural products are entitled to the very best consideration, and in our humble judgment the improved implements, etc., that make it possible to make an exhibit of agricultural products should receive equal consideration.

It is impossible at this writing to give you a very accurate idea of the amount of square feet of floor surface that will be required by this industry, but we suggest that you should provide for at least twice as much floor space as was used for implements, vehicles and wagons at the World's Columbian Exposition at Chicago. We have heard several people express themselves on this subject and this seems to be quite a universal idea. We propose if possible to ascertain more definitely as to the amount of space required, so as to give you the benefit of all information that can possibly be obtained. We endeavored to ascertain the possible charge for this floor space, but although conferring with several parties we have not yet obtained this information, and if we could have it, it no doubt would be of assistance to us.

Farm implements and machinery should without question be grouped in one building and under one cover and on one floor, and the opinion of this committee is that vehicles and wagons should also be exhibited in the same building and on the same floor with agricultural implements and farm machinery. We understand that you have all of these three lines of manufacture under your supervision, and we would be very glad indeed if they could be kept together. This may not conform with the idea of every individual manufacturer of vehicles and wagons, but we no doubt will have expressions on this subject in the future. At other world's fairs, if we are correctly informed, vehicles and wagons have been exhibited in the transportation building or under the supervision of the transportation departments. The reason why in our judgment farm implements, vehicles and wagons should be exhibited together is that many of our manufacturers make both implements and wagons or implements and vehicles; jobbers who handle farm implements always handle vehicles and wagons in connection therewith; retail dealers who buy these goods of manufacturers or jobbers always handle implements, vehicles and wagons; thus the industries are so closely allied that they are almost one, and the people who will visit the World's Fair and who are interested in agricultural implements are equally interested in vehicles and wagons, and we hope you will be successful in retaining all of these lines of industry under your supervision.

We propose to make an effort to bring before the different national associations of manufacturers in our line the importance of the St. Louis World's Fair as opportune time and place for manufacturers to make a first class display of their lines. While each individual manufacturer will have to decide in his own mind whether or not he will make a display, these associations, in our judgment, by urging and recommending manufacturers to exhibit, can and will have a great influence on the success of the exhibit. There are three very strong associations, as follows, namely—the National Association of Carriage Builders, the National Association of Implement and Vehicle Manufacturers, and the National Association of Wagon Builders. We have addressed each of these associations through their proper officers, urging them to bring this matter before the associations, and recommending strongly that their members take an individual interest and make displays. There seems to have been an impression created in some directions that the St. Louis World's Fair was a local enterprise, and this idea of localizing it should be dissipated entirely, as certainly if it is anything, it should be a national or international enterprise and a world's fair in fact.

The selection or appointment of a chief for this, the implement and vehicle department is a very important matter not only with the Fair Association, but most certainly with the manufacturers who propose to exhibit. A man for this position should have a wide acquaintance, he should have a standing, he should be a man who is thoroughly acquainted with the implement, vehicle and wagon industries, he should be thoroughly up to date in every respect. Such a man should be selected with great care. He need not necessarily be a St. Louis man, in fact, the selection of an outside man might do more to impress upon the minds of the manufacturers that this was really a world's fair, than if a local selection was made. It may be that the manufacturers who are interested will want to make some recommendations or suggestions in regard to the chief of this department, and we would suggest that this appointment be held in abeyance for a while until parties interested can canvass the subject to a certain extent and make recommendations or suggestions. In our judgment nothing would kill the interest in this department quicker than to select an incompetent person for this department, as he will have much to do with interesting the manufacturers and se-

C. W. Mansur,
Secretary Mansur & Tebbetts' Imp. Co.
J. D. Manley,
Manley & Thompson.
L. N. Burns,
Manager of St. Louis, Kingman & Co.
Henry Leudinghaus, Jr.,
Manager Leudinghaus-Espenschied W. Co.
G. J. Cram, Chairman,
Manager Missouri Moline Plow Co.

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ARCHITECTS ARE AT WORK PREPARING DESIGNS FOR BIG STRUCTURES AT ST. LOUIS.

THE development of the Louisiana Purchase Exposition along many lines has become quite appreciable. The definite statement of the sizes of the principal exhibit buildings is of especial interest. The largest of these will cover 32½ acres, and will be devoted to agriculture and allied industries. Seven other buildings will cover about seventeen acres each, and four others about nine acres each. The total now planned for will amount to about 187 acres. These figures give some idea of the magnitude of the exposition by which the centennial of the Louisiana Purchase is to be celebrated in 1903.

The commission of architects devoted some time last week to an examination and approval of the ground plan for the great fair. The work of designing the largest buildings ever used for world's fair purposes was assigned as follows:

Agricultural Building, 700 x 2,000 feet, Isaac S. Taylor.

Manufacturers' Building No. 1, 600 x 1,200 feet, Eames & Young.

Manufacturers' Building No. 2, 525 x 750 feet, Eames & Young.

Social Economy Building, 550 x 700 feet, Barnett, Haynes & Barnett.

Liberal Arts Building No. 1, 600 x 600 feet, Carrere & Hastings.

Liberal Arts Building No. 2, 525 x 750 feet, Carrere & Hastings.

Transportation Building, 600 x 1,200 feet, Widmann, Walsh & Boisselier.

Education Building, 550 x 700 feet, Theodore C. Link.

Art Building, main division, 300 x 600 feet, two wings, each 200 x 300 feet, Cass Gilbert.

Mines and Metallurgy Building, 600 x 1,200 feet, Van Brunt & Howe.

Service Building, 300 x 300 feet, Isaac S. Taylor.

Electricity Building, 600 x 550 feet, Walker & Kimball.

U. S. Government Building, 100,000 square feet, J. Knox Taylor.

A uniformity of eave line will be observed at a height of 65 feet. The total cost of these buildings has been estimated by Mr. Isaac S. Taylor at $7,000,000. A number of other buildings not yet assigned are to be erected.

WAGON ROADS IN PALESTINE.

ONE of the greatest thoroughfares in Palestine is that between Jerusalem and Nablous, the ancient Schechem. For centuries it has been only a camel path, in many places rough and stony, and in spite of the vast amount of traffic, it was not until 1900 that an effort was made to connect the two cities by a carriage road. Early in that year, the route was surveyed and specifications sent to Constantinople, whence orders for the construction of roads must emanate Work was begun the following autumn, and in March of the present year the first carriage passed over the completed section between Jerusalem and Bireh.

The extreme width of the roadbed is 19 feet 6 inches. After the grading, a bed of cracked stones eight inches in thickness was made, over which earth was spread. The road was then well rolled. The grade is good, there being very few places where a horse can not trot. I refer, of course, only to the completed portion between Jerusalem and Bireh. The culverts and small bridges on this section are twenty in number, with three additional bridges of fair size, the largest having two 10-foot arches, separated by 15 feet of solid masonry. These culverts are necessary to accommodate the small torrents created by the winter rains, which often do great damage.

From Jerusalem to Sinjil is a little over 19 miles, and from Bireh to Sinjil about 10 miles. The entire distance from Jerusalem to Nablous is 38½ miles. American travelers will remember Sinjil as their camping place the first night out of Jerusalem, going north toward Damascus. It is a curious fact that "Sinjil" is an Arabic adaptation of "St. Giles" of the Crusades, and "Bireh" is the Biblical "Beeroth" mentioned in Joshua ix, 17. Bireh has a good spring, and there has been talk of bringing water thence to Jerusalem.

The contract price for building the completed section of the road was about $23,000. There were only two bidders, both Christians (Armenians). Mohammedans and Jews do not engage in such work.

The distance between Bireh and Sinjil is only one mile greater than that between Jerusalem and Bireh, but the country is more rugged. There are many natural obstacles to be encountered, and the estimated cost of that section is from $40,000 to $44,000. Specifications have already been sent to Constantinople, and it is hoped this portion of the road will be built next year. The money will be raised in the Jerusalem district by a tax upon the peasantry. The Jerusalem district ends at Sinjil; what is north of that point comes under the jurisdiction of Nablous. This route is associated with many famous historical events, and the contiguous country contains the sites of the ancient cities of Nob, Gophna, Beeroth, Bethel, Ramah, Shiloh, etc.

The wagon roads already existing in Palestine are:

(1) Jerusalem to Yafa, 40 miles; begun in 1868, but a number of years elapsed before wagons could pass over it, and then only with difficulty, ten to twelve hours being required to go down to Yafa and fourteen to sixteen to climb back up the mountains. Thousands of tourists will remember the great discomforts of this trip. It was only in 1892, when the railroad between these two points became a certainty, that the Jerusalem and Yafa road was made fairly comfortable for carriages.

(2) Jerusalem to Hebron, 23 miles; completed in 1890.

(3) Jerusalem to Jericho, about 22 miles; completed in 1898. Ten years were spent in building this road.

(4) Jerusalem to the top of the Mount of Olives, about 4 miles; made in 1898 for the Emperor of Germany.

(5) Jerusalem to Bireh, 9 miles; just completed.

It is true that carriages go from Jericho to the Dead Sea and the River Jordan, but there is no road, the carriages driving where they please across the plain. Likewise wagons go along the roadless seacoast from Yafa to Haifa, at the foot of Mount Carmel, the road which was made for the Emperor of Germany in 1898 being entirely in ruins. Wagons also go from Yafa to Gaza, but no road was ever made there.

SELAH MERRILL, *Consul.*

Jerusalem, June 11, 1901.

SUBSCRIPTIONS FOR THE TECHNICAL SCHOOL.

FROM THE PROCEEDINGS OF THE CARRIAGE BUILDERS' NATIONAL ASSOCIATION.

(See also pages 358 and 359.)

Standard Anti-Friction Equipment Co., 50 Broadway, New York, N. Y.	$50 00
Muncie Wheel and Jobbing Co., Muncie, Ind.	25 00
Firestone Tire and Rubber Co., Akron, O.	25.00
King Spring Co., Buffalo, N. Y.	25.00
Jackson Carpet Co., 128 N. Third St., Philadelphia, Pa.	10.00
Excelsior Seat Co., Columbus, O.	25.00
Hartford Rubber Works Co., Hartford, Conn.	100.00
Sheldon Axle Co., Wilkesbarre, Pa.	25.00
Premier Mfg. Co., Hartford, Conn.	25.00
R. D. Scott & Co., Pontiac, Mich.	10.00
Kokomo Rubber Co., Kokomo, Ind.	25.00
Shuler & Thomas, Springfield, O.	5.00
Lee & Porter, Dowagiac, Mich.	25.00
R. J. Todd, Boston Mass.	15.00
C. C. Bradley & Son, Syracuse, N. Y.	25.00
Fitch Gear Co., Rome, N. Y.	10.00
C. A. Willey, Hunter's Point, N. Y.	25.00
Searls Mfg. Co., Newark, N. J.	25.00
Eberhardt Mfg. Co., Cleveland, O.	100.00
Tire Setting Machine Co., Lyme Rock, Conn.	10.00
Miller Bros., Amesbury, Mass.	15.00
M. H. Strong, Rochester, N. Y.	5.00
Vogt Lace Mfg. Co., Rochester, N. Y.	50.00
M. Strauss & Co., Newark, N. J.	25.00
W. H. McIntyre, Auburn, Ind.	25.00
Blanchard Bros. & Lane, Newark, N. J.	50 00
Selle Gear Co., Akron, O.	25.00
McKinnon Dash Co., Buffalo, N. Y.	25.00

THE KERATOL LOG CABIN.

THE Keratol Co., of Newark, manufacturers of artificial leather, had a large exhibit at the dealers' exhibition in New York. Their booth was a miniature log cabin, made of rolls of keratol, the different rolls containing about three miles of goods in all of the many colors manufactured by them. These goods are used in almost every line of manufactures. It is largely used for carriage and car trimming, furniture upholstering, harness pads, book binding and other purposes. The material is waterproof, has a hard and durable surface, and is finished plain grained and embossed.

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TWENTY-NINTH ANNUAL CONVENTION OF THE CARRIAGE BUILDERS' NATIONAL ASSOCIATION.

CINCINNATI, OCTOBER 22 TO 25, 1901. DETROIT, MICH., IN 1902.

FIRST DAY.

CINCINNATI, O., October 22, 1901.

THE twenty-ninth annual convention of the Carriage Builders' National Association was called to order in the assembly room of the Grand Hotel, Cincinnati, at 2 p. m.

Mr. F. B. Judkins, the president, in the chair; Henry C. McLear, the secretary, in his position.

THE PRESIDENT'S ADDRESS.

Gentlemen of the Carriage Builders' National Association: The twenty-ninth annual convention of our association brings us once more to the Queen City of the West, after an absence of ten years, and it is a singular coincidence that when we met here in 1891, an qqual period had elapsed since our previous meeting here in 1881. We are received with the same open arms and free-hearted hospitality that characterized our former meetings here. We see some of the old familiar faces among our hosts, some of them the war horses of our association, that welcomed us then—a few of the familiar faces are gone from their midst, never more to greet us.

The recent, untimely death of our beloved President calls to mind the fact that at the convention held here twenty years ago we were mourning the death of President Garfield. Both of these martyred Presidents were sons of the State in which we are meeting to-day. How little we thought in 1895, when it was our pleasure to greet and entertain William McKinley as our guest of honor at our annual banquet at Cleveland, that when we next met in convention in Ohio we should have occasion to mourn his death at the hands of an assassin! His eulogy has been pronounced by thousands. We can say nothing more expressive than the words with which he eulogized Lincoln: "A noble manhood nobly consecrated to man never dies."

We wish to congratulate the members of this association upon the generally prosperous condition of our industry; it having participated to its full share in the country's prosperity of the past year.

We shall not attempt to assume the prerogative of the executive committee in giving you a mass of statistics to prove this statement. It is no wonder that the tremendous strides the American people have made, not only in our industry, but in all others, during the past century, caused Lord Rosebery to think there was serious danger in British complacency. In an address at Birmingham, he remarked: "A disdain of finality and anxiety for improving on the best seems almost a disease in America, but in Great Britain we can afford to catch the complaint at any rate in a mitigated form, and give in exchange some of our own complacency."

In looking back over the past decade we know of no industry where that same "anxiety for improving" has been more fully demonstrated than in our own.

We are also pleased to notice that during the past century the mechanics in our factory have shared in the good things that our industry has enjoyed as, for instance, the average wages of the blacksmith have advanced from 70 cents per day at the opening of the last century to $1.92 at the close.

We are pleased to note whatever alarm the automobile may have caused any members of our association, that the last bulletin of the Census Department gave 124,128 horses in the City of New York alone, proving most conclusively that the recent much heralded approach of the "passing of the horse" has not yet arrived, and that there were still 2,777,497 horses in this country, not including those kept on farms and ranches; thus proving that in this vast country of ours there is plenty of room for both automobiles and the vast product of our factories.

The American manufacturer need not fear competition. Men need the stimulus of competition to do their best; to it we owe our development. It is the fuel which feeds the fire of ambition. Therefore, let us as carriage builders of the United States use all our strength and energy to do the best that in us lies, and if we do this, we may feel certain of success.

I now declare the twenty-ninth annual convention of this association open for business.

REPORT OF THE EXECUTIVE COMMITTEE.

The President: The next business in order will be the report of your executive committee, and in the absence of the chairman of that committee, Mr. Wilson of New York, Mr. Kimball has been requested to read the report.

Mr. Kimball read the report as follows:

Mr. President and Members of the Carriage Builders' National Association:

Gentlemen—In presenting to you the twenty-ninth annual report of your executive committee, it is becoming that we should first speak of the horrible tragedy of September 6th, when our beloved and honored President, William McKinley, was stricken down in the fullness of his career, shortly after he had delivered a message to the American people that seemed in many ways to have summed up and rounded out the splendid achievements of his life. As American citizens we mourn his loss, and pledge to our new President, Theodore Roosevelt, our earnest support and best wishes.

TRADE CONDITIONS.

We congratulate the association upon the fact that the past year has been one of the most prosperous our trade has ever known, and we believe we fully appreciate the good fortune we are sharing with the other great industries of this country. At present the future seems to assure a continuation of these splendid conditions. We desire, however, to caution against over-production, and express the hope that the experience of the panic years will lead us to guard carefully against possible bad trade conditions in the future.

SECRETARY AND TREASURER'S REPORT.

We note with pleasure the good financial condition of the association—details of which will be given in the report of the treasurer.

Our membership, however, has not increased during the last year. This is not satisfactory to your committee. If those leading men of the carriage trade who conceived the idea of this association, and with splendid loyalty built it up and held it together through the vicissitudes of its early years, demonstrated it was worth something to them, and if those who since the death or retirement of the founders have carried on the work have been justified by its twenty-nine years of success, then there must certainly be throughout the country many who would gladly join with us, if they were asked to do so by the present members. The new members would certainly receive advantages far in excess of the dues paid in. The spirit of good fellowship and the broadening of the circle of acquaintance would not be the least of the benefits. The convention proceedings are in themselves a trade educator. The value of the certificate of membership is not alone a mark of honor; it is as well the stamp of prestige, and has often been the silent but sure means of increasing trade, and this not alone in the large centers, but even in the smaller places, where taste is as acutely developed as in the great cities.

While it is our desire to increase the membership, it is not a selfish aspiration, but it is in the highest sense for the benefit of all the craft.

Your committee recommends that the constitution and by-laws be so amended as to provide for the election of a vice president from each and every State that is represented in the association, and that these vice presidents be constituted a committee on membership, and that it be the duty of this committee to secure as many members as possible in the states represented by them, and that the first vice president be the chairman of this committee, and his duty shall be the supervision of this work. He shall require a report from each member of the committee on his year's work, and he shall report this to the executive committee, who, in turn, will apprise the association of the work accomplished. We have no doubt the vice presidents would willingly undertake this duty in the full assurance that the work so performed would be of great value to the association.

ASSOCIATE MEMBERS.

The members of the Carriage Builders' National Association cannot fail to notice with what splendid loyalty the associate trades have

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supported the association ever since its inception. If active members will note the list of associates they will see that it covers every line of industry with which we have any dealings, and while it is a compliment to us, we cannot fail to be mindful of the fact that they have added much to the pleasure of our conventions, and very much of good advice and wise counsel in our deliberations.

MEETINGS.

In former years it was the custom to have one session daily, commencing at 10 a. m., but at the convention of 1899, held in Indianapolis, New York in 1902, and also this year in this city, our meetings will be held in the afternoon. This change from morning to afternoon session was made at the suggestion of some of our members who were of the opinion that it would be advantageous to the association. Your committee would be pleased to have this matter considered, so that they might know which would better meet the convenience of the members, a morning or an afternoon session.

DESIGNS FOR COMPETITION.

Your committee will submit for your consideration a plan for prizes, to be competed for by workmen throughout the country, who shall furnish drafts of specified kinds, for which four prizes are offered, awards to be determined at the next convention, and this plan, if found practical and of value to the members, will be continued indefinitely.

Your earnest thought and attention is asked for this proposition, as it is done solely to create a deeper personal interest in the work of the Association.

GOOD ROADS.

Some years ago, this Association had a "Good Roads Committee," and had some very interesting and instructive reports from it. The movement for good roads has gained great strength throughout the country, and we suggest that a committee be appointed to co-operate with other associations interested in this work.

THE LOUISIANA PURCHASE—WORLD'S FAIR.

We invite your attention to the proposed World's Fair to be held in St. Louis in 1903. This World's Fair will be of interest and value not only to the West, but to the whole country, and has already received the hearty co-operation of many foreign countries.

We suggest the appointment of a committee to represent our Association in preparing for this great World's Fair.

EXHIBIT OF MATERIALS AND PARTS OF VEHICLES.

We ask the careful inspection by every member of the exhibit of materials and parts of vehicles now open in Music Hall, corner Elm and Fourteenth streets. This year's exhibit maintains its usual high standard, and is replete in novel and staple goods. The exhibit has always held the interested attention not only of our members, but has proven a magnet to the craft in cities visited. It has not only become a feature of commercial importance to both exhibitor and carriage maker, but has been an educator of the utmost value to the artisan, which in turn has redounded to the benefit of his employer.

TRADE JOURNALS.

The Association has always felt and gladly made expression of its obligations to the journals published in the interest of our trade, for their hearty and efficient support. The publicity given our proceedings has broadened the interest shown in conventions to the entire trade, and the work has been done with a thoroughness and discretion that is one of the best proofs of the ability of our trade journals.

CENSUS.

It is to be regretted that it was impossible to obtain in time for the convention the full report of the transactions from the years 1890 to 1900 in the carriage trade, but the report was so exceedingly voluminous that it was impossible to obtain it before next winter, and we will, therefore, present a summary of this at the next convention.

We can present, however, the following, that may be of interest to some of the members:

The total foreign shipment of vehicles for the eight months, ended September 1st, 1901, was.....$1,854,696.00

The greater part has been shipped to the United Kingdom.

Compared with the commerce of our country the exports in our industry seem to have been insignificant. The vehicles exported have been mostly those of the lowest cost; and to manufacturers who have in mind making a specialty of this business we would suggest that success can only be obtained by having representatives first go abroad, find out what is wanted and adapt the methods to the nations to which they ship the goods.

OBITUARY.

We regret to have to ask for the appointment of an obituary committee to report upon the death of the members whose names are given below, many of whom had been members of the Association for a great many years, and who were loyal to us through all these years of membership.

Honorary: I. D. Ware, Philadelphia, Pa., January 31, 1901, age 72.

Active: Jerome Stivers, New York, January 27, 1901, age 54; G. Lemley, Youngstown, O., July 21, 1901, age 61.

Associate: J. B. West, Rochester, N. Y., October 22, 1900, age 67; Wm. D. McCracken, Cincinnati, O., December 19, 1900, age 58; C. Bauer, Cincinnati, O., January 8, 1901, age 53; James N. Duffy, Eldred, Pa., October 17, 1901.

TECHNICAL SCHOOL.

We earnestly request a careful examination of the exhibit of the Technical School, as well as the report of the able instructor, Mr. Andrew F. Johnson, and that of the committee who have in charge its work: Messrs. Franklin Murphy, E. M. Hotchkiss, Geo. H. Babcock. W. W. Ogden and N. Albert Hooker, who have given their personal and careful attention to this school as our representatives. A simple vote of thanks and recognition would please the committee, but the obligations we are under to them can not be requited in that way. We must recognize their work by generous contributions to the fund necessary for the maintenance of this school, which should be the pride of the carriage builders for what it has done in the past for out craft as well as what it is doing now in spreading the benefits of a finer training among the workmen throughout the country.

ADDRESSES.

The addresses to be read at this meeting have been most carefully prepared by the gentlemen who will read them, with the sole purpose in view of the benefit their consideration may afford you.

It is estimated that our members can in no manner pay the speakers so graceful a compliment as by the courtesy of their attendance at the meetings in full number. In fact, the proceedings as a whole should, and do, require the most active interest of members, and the good to be derived greatly out-measures that to be gained by a mere reading of what has been done. The greatest incentive to your officers in their efforts to provide speeches of interest and value is the compliment of your daily attendance at the sessions and your active co-operation in the exercises.

Respectfully submitted,

DANIEL T. WILSON,
CHARLES ARTHUR CARLISLE,
W. C. DURANT,
TOM CONNOLLY,
S. K. PAGE,
CHAS. F. KIMBALL,
C. D. FIRESTONE,
D. M. PARRY,
E. W. M. BAILEY,
FRANK L. WRIGHT,
MORRIS WOODHULL,
W. W. OGDEN,
F. B. JUDKINS,
H. C. McLEAR.

The report of the committee was received with applause.

The President: What is your pleasure with the report of the Executive Committee?

Mr. Mulholland: I move that it be received and the recommendations of the committee be taken up later.

The motion of Mr. Mulholland was seconded and agreed to.

REPORT OF THE SECRETARY AND TREASURER.

The President: The next business in order is the report of the Secretary and Treasurer.

Mr. McLear read his report as follows:,

TREASURER'S REPORT.

The Treasurer of the Carriage Builders' National Association of the United States begs leave to report as follows:

Cash on hand October 1, 1900	$3,773.86
Receipts from October 1, 1900, to October 1, 1901	6,887.54
Total income for year	$10,661.40
Total expenditures	5,841.61
Cash on hand October 1, 1901	$4,819.79

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From October 1, 1900, to October 1, 1901, we received into the association 23 active and 32 associate members.

During the same period we lost by death, resignation and the rule of limitation 22 active, 32 associate and one honorary member, making the present membership of the association 263 active, 328 associate and 29 honorary members, a loss during the year of one honorary member.

HENRY C. MCLEAR, *Treasurer.*

Examining Committee,
CHAS. A. CARLISLE,
EDW. M. BAILEY,
FRANK E. WRIGHT.

The President: Gentlemen, what will you do with the report of the Secretary and Treasurer?

Mr. Lowe Emerson: I move that it be approved and printed with the records. The motion of Mr. Emerson was agreed to.



HENRY CLAY STAVER.

President of the C. B. N. A., 1901 and 1902.

ADDRESS BY MR. HENRY P. JONES.

The President: As the report of the Trustees of the Technical School and the Treasurer of the School are laid over until to-morrow, the next we have is an address by Mr. Henry P. Jones, of Newark, on "Wheels and Wheel-making."

Mr. Jones spoke as follows:

WHEELS AND WHEEL-MAKING.

Mr. President and Gentlemen of the C. B. N. A.:

Some time in mid-summer I received a letter from our honored Secretary, Mr. McLear, asking me to prepare a paper, to be read at this meeting, about wheels.

Now, he did not state what kind of wheels he wanted me to talk about—whether roulette wheels, wheels of fortune, or the wheel or weal of woe. By the way, I think the carriage maker, and with him the wheel-maker, has a good deal of woe in this life of ours, and therefore I did not think he meant this kind of weal, and as in our little State of New Jersey, Judge Fort had told all the gambling places to close up at Long Branch, so even if I could instruct you in the use of the roulette wheel, there would be no chance for you to benefit by it. And just here I would say, every place in Long Branch is closed tighter than a drum this summer. Jersey law is great.

So, after due consideration I came to the conclusion he meant vehicle wheels, and then my wonder grew, as we all know that for wheel-making, as she is writ, there are none to compare with Howard M. DuBois. He is authority on the theoretical part of wheel-making, and could without doubt treat the subject in a more proper manner than I, but please bear with me and I will do the best I can.

Now, wheel-making is a great subject, and if any of you carriage makers think of going into the business, my advice is—don't. Why, do you know, the poor former is such an autocrat that he wants you to advance the money to pay for the manure to put on his ground to start the hickory tree growing, and when the timber is shipped he wants to draw on bill of lading.

Years ago—say 1875 to 1880—we obtained a great many of our rived hickory spokes from twenty miles of our factory at Newark, and of a Saturday there would be from fifteen to twenty loads of rived spoke billets come in our yard.

By the term "rived" spokes, it is meant that they are split out, not sawed, and a split spoke billet is much better than a sawed billet. This supply has now about run out, and as the State of New Jersey has produced the best hickory that ever grew, I should like to see our national government make an appropriation for the planting and culture of the hickory tree, distributing the money through the different Congressional districts, and it would be capital well invested.

The different woods used in wheel-making—hickory, elm and oak, want to be dry before using, but not too dry. Kiln heat is not good, it is too great, and even in a moderately heated dry-room, timber does not want to stay too long, as it takes the life out of the timber, especially hickory and elm.

A hub of elm timber goes back after ten years or so.

To illustrate kiln-drying: In 1880 or thereabouts, we made a set of Warner wheels for a piano-forte maker, and when he received them, he put them into his dry-kiln where he dried his sounding boards and let them stay there for some time. When he took them out he found they were all loose in the hub and felloe, and had been literally dried to death. He returned them, claiming a new set of wheels, and my honored father, Phineas Jones, wrote him that if any one was such a d—n fool as to treat a wheel in that way, he never ought to have a carriage. The outcome of it all was, he wrote back and said he guessed he was a d—n fool and to make him another set of wheels and he would pay for them.

In preparing hubs for wheels they have to go through ten to fifteen machines. Spokes, according to kind, through twelve to sixteen machines. Rims through nine to ten machines, and about double this number of hands, and great care is needed.

Some of you know that the old-fashioned wood hub wheel is a specialty with our firm, and if made right there is no better wheel made. But I will quote, and quote exact, from a remark made at a gathering of wheel-makers, by Henry G. Olds, who at one time made more wheels than any other man in the world, he said, addressing his remarks to me, that any d—n fool could make a Sarven wheel, but that it took a mechanic to make a wood hub wheel to stand.

Now here I have a section of a mortised hub, the front wall of which must be perfectly true and perpendicular. The spoke to go into this mortise should be faced perfectly true, so that every part of the face of the spoke shall touch every part of the front wall of the mortise. The taper of the back wall of the mortise should be exact and each mortise like its fellows—no variation, and the taper of the spoke should be made to correspond with the taper of the mortise, giving a slight pinch in driving. Every lot of spokes should be fitted to its companion lot of hubs, and not the hubs mortised to fit the spokes.

Now if a spoke is dubbed off at the point the same as I show here, the driver, when he comes to drive them, finds his spoke going back, as the face of the spoke will seek the face of the mortise and then he pulls it forward to bring it up to the gauge, and when the spoke is driven there is a vacuum at the foot of the mortise. The same thing occurs when the spoke is faced badly. (Illustrates.) This is one of the most particular things in wheel-making. Then again, a spoke can be driven too tight so that it breaks down the wall of the mortise.

Wheels made right one could readily call "custom made," and I don't care how much a carriage maker gets for his work, he can afford to use wheels so made, whether made in his own factory or in a wheel shop, without loss to his reputation.

James Hall & Son received $650 for their Goddard buggies, and we mortised their hubs, fitted their spokes, and they warmed them up, to take out the dampness received en transit and then drove the spokes into the hubs exactly the same as we, and they made so-called hand-made wheels.

In passing I may say that we receivced $12.70 a set for the stock only and yet the carriage makers of to-day (many of them) want and do buy a so-called best wheel for $8.

After your spokes are driven into the hub, then one must exercise due care in the rimming of the wheel, so that the rim will not be too long and cause the wheel to get rim-bound, nor too short, which will throw too much dish in the wheel. The rim should be bored so that the tenon of the spoke will fit very snug at all points, each hole re-

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ceiving its own spoke. Wheels tenoned right and rims bored right and the timber just right, never require screwing and never will split.

Now, when the carriage maker gets a good, fine wheel, he can ruin it without half trying, in boxing it and tiring it. In boxing a wheel, wet white lead should never be used. It is forever drying and the impure oil will soak up in the tenon of the spoke and cause it to get loose. I have pulled spokes out of hubs where the boxes are set in white lead, and sawed the spoke off three inches above the tenon, and in half an hour's time you could see the oil work up through the wood, the air drawing it up and out as it were.

Dry red lead and slush varnish are good for setting a box. The old firm of Long & Silsby, of Albany, set their boxes this way twenty-five years ago. A hub should be bored exact to receive the box, not cutting the wood all away and filling it up with wedges. Only a few weeks ago we had a set of wheels returned, so badly cut away that the boxer had to put in seven wedges, and they were big ones too, 7/8 in. wide, 3-16 in. thick, and about 1 in. long. These caused the hub to shell up and go pieces. And then again, when the hub is so cut away it lessens the depth of the spoke tenon and leaves insufficient holding surface.

One great cause of wheels failing is the shelling of the hubs. The back end of the hub is more apt to shell and this is caused by the back band being put on too tight, and when the hub swells from washing, etc., the center swells which the back end of the hub cannot do, being held tight by the band, and so the wood shells up. Good timber is more apt to shell than poor timber.

Of course the poor wheel-maker has to stand the brunt of all these mishaps

Now right here I will say a word about guarantees. We think sometimes the carriage maker asks too much. We had a case this May. A party sent back a set of wheels, claiming they did not stand well. We scraped the front of the hub to see the order number, and found that the wheels were made in March, 1893, over eight years ago, and we simply had to write the carriage maker that there was some limit to a guarantee.

Then we had another case. We made a man a new set of wheels free of charge and then he made out an expense bill, tiring, boxing and painting, and $5 for injured feelings. We wrote and asked him what that was for and he said the wheel broke down when he was taking his mother-in-law to the train, and the result was he had to keep her two more days and so he made the claim.

Before I forget it, let me say I think the Technical school is doing a great work for our trade, and I most cordially invite any of the pupils or teachers to visit our factory and we will do our best to give them any information we can, in regard to timber, wheel-making, etc., giving them the freedom of our factory as it were.

Looking back over the wheel business since 1855, when our firm started in business, while it may not result in any money profit, it may be of interest to you.

Taking the wheel business in periods of five years each, we find by our books the following:

1855 to 1860, the proportions of wheels were much different. Heights of buggy wheels were 3 ft. 10 in. and 4 ft. 2 in. and 3 ft. 11 in. and 4 ft. 3 in. Now 3 ft. 6 in. and 3 ft. 10 in. is the prevailing height in the East and 3 ft. 4 in. and 3 ft. 8 in. in the West. Buggy hubs were 4¼ in. diameter for 1 in. spoke, 14 and 16 spokes. Now 3½ in. diameter for 1-in. spoke, and 14 and 14 spokes. Our friend, Sherron, of *Varnish*, shows a cut of a high-wheel buggy made in 1858.

A new condition came up in wheel making in 1894—that is, rubber tires. The first we did of it was in October, 1894, and the convention that year, held in Philadelphia, was the first year samples, etc., were shown. Candidly speaking, we think it has hurt the wheel trade 25 per cent. That is, the rubber tires lessen the call for wheels 25 per cent., owing to the increased life of the wheel, and it has also hurt the carriage maker, principally the smaller maker.

In 1895 to 1900 another new condition came up, that is, wheels for automobiles and horseless vehicles. In January, 1899, we began making wheels for this trade, and the business has steadily increased. It looks now as if there might be quite a business in horseless vehicles, but as yet the manufacturers have reaped little profit.

The making of these wheels is quite different from the regular carriage wheel—the hubs are of metal and the wheel is made something after the principle of the Archibald wheel—the spokes all touch, and they require a very large head, making them eat up timber fast.

There is one thing more about wheel making—that is to get handsome, stylish wheel. You may use the best of timber, well put together, but if you don't get in the style the carriage maker will have none of them. J. Curley, of Brooklyn, N. Y., told me some years ago that a wheel would make or unmake the sale of a fine brougham. He said the consumer, or layman, knew a great deal more about wheels than formerly, and insists upon having everything just so. (Applause.)

The gentleman who preceded me, Mr. Kimball, spoke about the Technical School, and I think with him that the Technical School is doing great work for this association. I would like to say to the committee, and also to the principal of that school, and to all in it, that if they would like to visit our factory I shall give them the freedom of it, take pains to show them around and tell them all I can about wheel making and about wheels, timber, etc.

ENTERTAINMENT OF THE LADIES.

The President: I would like to make an announcement. Mr. Overman, chairman of the local entertainment committee, requests the members of the association who are accompanied by ladies to hand the names of the ladies to the president, either at the close of this meeting or as soon after as convenient. And I wish that the members who are here would tell the other members that are not here about it, as the local committee have entertainment in view for the ladies. This is their object in calling for the names.

NOMINATIONS FOR PRESIDENT.

The President: As the reports of the trustees of the Technical School and the treasurer are not ready to-day, and are passed until to-morrow, the next thing we have will be nominations for president. These, you know, are made from the floor, in accordance with the resolution passed two years ago; and the nominations are held over till to-morrow, at which time they will be voted on.

The chair awaits any nomination.

Mr. George H. DeGolyer nominates H. C. Staver, of Chicago. C. F. Kimball seconded.

Mr. Kimball: I second it, Mr. President.

The President: What other nominations are there?

Mr. Timken: Frank L. Wright as president. H. A. Moyer seconded.

The President: Are the nominations all made? (After a pause.) If so, I declare the nominations closed.

APPOINTMENT OF COMMITTEES.

The President: The next business in order is the appointment of a committee to recommend candidates for vice president, secretary-treasurer, and to fill the vacancies in the executive committee. I will appoint as that committee Colonel W. T. Jones, Carthage, N. C.; Charles F. Robinson, Amesbury, Mass.; W. H. McCurdy, Cincinnati, O.; H. H. Timken, St. Louis, Mo., and R. Edwin Joyce, Washington, D. C.

I will appoint on the committee of exhibits the following: Mr. A. F. Johnson, of New York; Mr. Frank E. Pease, Merrimac, Mass., and Mr. Howard S. Miller, Cincinnati.

As a committee on obituary resolutions, I appoint the following: Lowe Emerson, Cincinnati, O.; Henry Timken, St. Louis, Mo., and Henry P. Jones, Newark, N. J.

EXCURSION TO MAMMOTH CAVE.

Mr. McIntyre: Mr. President, an arrangement has been made with the Louisville and Nashville Railroad looking to an excursion from this point Friday noon, returning Sunday morning; and a representative is now at the Exhibition Hall waiting to book prospective excursionists.

The President: This completes the program for the day, and the meeting is open for any new business which may be brought before it.

On motion, adjourned until 2 p. m. Wednesday, October 23.

SECOND DAY.

CINCINNATI, O., October 23, 1901.

The convention reassembled, pursuant to adjournment, at 2 o'clock p. m., Wednesday, October 23, 1901, in the assembly room of the Grand Hotel.

Mr. F. B. Judkins, the president, in the chair; Mr. Henry C. McLear, the secretary, in his position.

REPORT OF TRUSTEES OF TECHNICAL SCHOOL.

The President: The first business on the list of unfinished business left over from yesterday is the report of the trustees of the Technical School. Mr. Kimball will present the report.

Mr. Kimball: Mr. President and Gentlemen: In the absence of Hon. Franklin Murphy, who has this matter in charge, he sent me the

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report and requested me to read it to the convention. This is the report of Andrew F. Johnson, instructor-in-chief.

REPORT OF TECHNICAL SCHOOL FOR CARRIAGE DRAFTSMEN AND MECHANICS.

ANDREW F. JOHNSON, INSTRUCTOR-IN-CHIEF.

To the Board of Trustees of the Technical School, Franklin Murphy, Esq., Chairman:

Gentlemen:—I herewith present my report of the Technical School for the year which closed August 31st, 1901.

DAY AND EVENING CLASSES.

The day and evening classes opened for the season in the school rooms in the Young Men's Institute at 222 Bowery, New York city, on October 1st, 1900.

There was one day pupil and there were twenty-seven evening pupils.

All the pupils lived in or near Greater New York. They were of the following occupations: Fourteen body makers; four blacksmiths; four office men; two draftsmen; one general wood worker; one trimmer; one superintendent; and one employer. Their ages ranged from seventeen years to forty-seven years, and their average age was twenty-four years. At the close of the season one pupil was granted a certificate of graduation.

The day and evening classes closed on April 12th, 1901.

The attendance for the season in the evening class was 84½ per cent. of the enrollment, and in the day class it was 100 per cent.

On June 3d the Board of Trustees gave a dinner to the pupils. The dinner was held at the Brevoort House, and was much enjoyed by all present. Messrs. Murphy, Ogden, Hooker and Hotchkiss of the Board of Trustees were present. Mr. Murphy presided.

CORRESPONDING CLASS.

The number enrolled in this class at present is 414, and sixty-four of that number have joined during the year. This is a gain of 28 per cent. over last year. There have been 2,591 lesson papers sent out the past year, to pupils, and they have sent 1,271 drawings and 148 examination papers to the instructor for his inspection and correction, and the instructor has written 1,419 rating and instruction cards and mailed them to pupils. The instructor has received 804 letters from pupils, and has written 740 letters to them in the course of the year in reference to the studies.

THE WORK DONE.

Good work has been done the past year in all the classes. The evening class was larger than for several years past. So many pupils came in that the desk room was all taken, and new desks were constructed which made room for six more pupils.

OUR PAN-AMERICAN EXHIBIT.

The school exhibit which the trustees directed the instructor to prepare was taken to Buffalo on May 18th and installed in the educational department, and consists of 124 drawings as follows:

Eleven free-hand drawings.
Twenty-four geometrical problems.
Sixteen problems in projection.
Eight problems in developments.
Fifteen problems in shadows.
Twenty-seven working drawings of parts, drawn to full size.
Four working drawings of bodies, drawn to scale.
Three working drawings of gears, drawn to scale.
Five working drawings of the completed vehicles, drawn to scale.
Seven problems in perspective.
Three drawings of carriages in perspective.
One scale drawing showing the side view only of the completed vehicle.

The greater part of these drawings were made by pupils of the day and evening classes, and nearly every pupil was represented by a piece of work. Some fine drawings were contributed also by members of the corresponding class.

The exhibit reflects great credit on the pupils and it compares favorably with the work shown by other schools in the educational department.

The amount of work done in the corresponding class is twenty-five per cent. more than in any previous year in the history of that class.

Letters are frequently received from pupils, in which they recount the great good they have received from the studies, and express their gratitude to the men who are supporting this school, and thus making it possible for young men to gain a better knowledge of their craft which makes them more useful in the carriage trade. I take the liberty of quoting short extracts from some of these letters received during the last five years, omitting names and places as the letters were not written for publication:

No. 1. This letter was received from a young Canadian in May, 1897, and he strikes the keynote of the whole situation when he says: "I am very much pleased with my success and with the instruction, and I wish you and the school a long life and the best of success. It is the only chance I have ever found of learning, except what one can pick up in the shop from the men who are usually not too anxious to tell a young fellow much about the trade."

No. 2. This is from a business man in Massachusetts who writes under date of February 22d, 1897, and says: "I am working all the time on some problem or other which requires the application of some one of the lessons, and I find the knowledge that I have obtained very useful. I thank you very much for your patience and for your encouraging letters in the past."

No. 3. From a foreman woodworker in Indiana who writes on August 10th, 1898, and who says in the course of his letter: "I like the lessons very much and wish I had known of them ten years ago."

No. 4. From a body maker in New York State, who writes on December 17th, 1898. He says: "I feel that what I have learned so far is worth all it has cost me. I notice things about the work which are not right, quicker than I used to, and I am sure I can do better than I could before."

No. 5. A blacksmith, writing from New Jersey, says: "I am very glad I took the course of studies. I wish to express my sincere thanks to you for your attention given to me through the course."

No. 6. Abody maker in Indiana writes on June 16th, 1900: "I am very much pleased with the studies and think they are a great thing for a workman."

No. 7. A foreman woodworker in Nova Scotia says: "I have found the lessons of great benefit and wish I had had this chance years ago."

No. 8. A woodworker in Pennsylvania writes a letter dated June, 1901, in which he says: "I am highly pleased with the instruction received during this course. No money consideration could induce me to part with what I have gained by it."

The above quotations seem to prove that our lessons are regarded with favor by those who faithfully study them. The letters from which the extracts were selected, were written by men from twenty-five to forty years of age; old enough to know what they need, and to appreciate the thing which supplies that need. From business men, foremen of departments, and workers at bench or anvil, the opinion is the same after the lessons have been faithfully studied.

CONCLUSION.

I cannot close this report without thanking the Board of Trustees for their kindly supervision of the school and its work.

The managers of the Young Men's Institute are always kindly disposed toward the Technical School, for which I am grateful

To the managers of the trade journals, who are always ready and willing to help the school by printing notices, and by kindly editorials, I herewith tender my hearty thanks. Respectfully submitted,

ANDREW F. JOHNSON, Instructor-in-Chief.

In addition to this Mr. Ogden has handed me the treasurer's report, which is as follows:

Board of Trustees of Technical School for Carriage Draftsmen and Mechanics.

TREASURER'S REPORT.

October 12, 1900—	
Cash on hand	$ 644 72
November 2, 1900—	
Donation New York local committee	138 70
October 19, 1900—	
Subscriptions received	1,300 00
Pupils' fees	182 00
Other cash items	27 69
Interest bank deposit	11 24
Interest N. Y. and N. E. bonds	60 00
Total	$2,364 35
October 12, 1900—	
Expenses evening and day classes	$1,398 60
Expenses corresponding class	829 59
Expenses of treasurer	19 00
Cash on hand	117 16
Total	$2,364 35

Respectfully submitted,

E. M. HOTCHKISS, Treasurer.

Mr. Kimball (continuing): You will see from this report of the treasurer that the school did not receive last year sufficient funds to make it self-supporting, but was obliged to encroach upon the surplus to the extent of $525.

Last year at the convention in New York this matter was taken up as usual, and a committee was appointed to solicit subscriptions, but subscriptions were not solicited in our open meetings. It was left for subsequent work, and the result was, as often happens in such cases that members of the association who received notices by mail, laid them to one side for subsequent consideration and then forgot the matter, and the school did not receive the benefit it should have had.

You have heard in this report, and I again call your attention to the fact, that they have now in the corresponding classes over 400 members. The school is doing great good all through the country. It gives you better mechanics, better draftsmen and better men in every respect.

I think the proper thing to do to-day is to solicit subscriptions for the coming year right here in open meeting. I want to ask each and every one of you not to feel diffident; if you don't want to give five hundred dollars, make it five.

The following subscriptions for three years were offered at our

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convention last year in New York, payable in three yearly instalments. One in 1900, another in 1901, and the third in 1902:

Brewster & Co., New York city	$100 00
Murphy Varnish Co., Newark, N. J.	100 00
Henry Hooker & Co., New Haven, Conn.	50 00
Keyes & Wilson, New York city	35 00
J. B. Judkins & Sons' Co., Merrimac, Mass.	25 00
J. M. Quinby & Co., Newark, N. J.	25 00
Blanchard Bros. & Sons, Newark, N. J.	25 00
Stengel & Rothschild, Newark, N. J.	25 00
Phineas Jones & Co., Newark, N. J.	25 00
Standard Varnish Works, New York city	25 00
Blacksmith & Wheelwright, New York city	10 00
H. G. Shepard & Son, New Haven, Conn.	10 00
Sheldon Axle Co., Wilkesbarre, Pa., (subscribed April 19, 1901)	25 00
C. D. Firestone (subscribed April, 1901, for 1 year)	25 00
Total	$505 00

Mr. Kimball (continuing): This gives us a total of $505 on our subscriptions that are good for this and the coming year.

Now, there are a great many gentlemen here whose names are not on that list, and as I before told you, I want you to do what you feel you properly can. I will start it myself with $100 for three years. Is there anybody else?

The following subscriptions were received:

C. P. Kimball & Co., Chicago, Ill., (3 years)	$100 00
Studebaker Bros.' Mfg. Co., South Bend, Ind., (3 years)	100 00
The Hub, New York (1 year)	100 00
The Carriage Monthly, Philadelphia, Pa., (3 years)	100 00
Valentine & Co., New York, (3 years)	100 00
Mulholland Spring Co., Dunkirk, N. Y., (3 years)	10 00
Timken Roller Bearing Axle Co., St. Louis, Mo., (3 years)	25 00
Morris Woodhull, Dayton, O., (3 years)	25 00
Sechler & Co., Cincinnati, O., (3 years)	33 33
Canada Carriage Co., Gananoque, Can., (1 year)	25 00
Staver Carriage Co., Chicago, Ill., (3 years)	50 00
W. F. Adams, New York, (1 year)	25 00
Cleveland Axle Mfg. Co., Cleveland, O., (3 years)	25 00
W. A. Paterson Co., Flint, Mich., (1 year)	25 00
Michigan Buggy Co., Kalamazoo, Mich., (1 year)	25 00
Anchor Buggy Co., Cincinnati, O., (3 years)	25 00
Columbus Buggy Co., Columbus, O., (3 years)	50 00
A. J. Joyce Carriage Co., Washington, D. C., (3 years)	15 00
Franklin Buggy Co. (1 year)	25 00
Lambert Hollander, Amesbury, Mass., (3 years)	25 00
Frank L. Wright, St. Louis, Mo., (3 years)	25 00
Hume Carriage Co., Amesbury, Mass., (2 years)	25 00
Spears Axle Co., Wheeling, W. Va., (1 year)	25 00
Barnett Carriage Co., Cincinnati, O., (1 year)	25 00
W. A. Sayers, Cincinnati, O., (1 years)	25 00
Rattermann & Luth, Cincinnati, O., (1 year)	25 00
Geo. M. Hoffman, Des Moines, Ia., (3 years)	10 00
F. L. Graves, Rahway, N. J., (3 years)	10 00

Mr. Kimball: We have got about $1,100, but we ought to have $2,500. Of course there are a good many that are on the old list, and we can get at them personally and by correspondence; but I would like very much to hear more from the gentlemen who are present in this room. Is there any one else to subscribe?

Mr. Ogden: I would like to make a motion that the chair appoint a committee of three to continue the solicitations for subscriptions during the continuance of the convention. I also hope that you will be able to make your subscriptions for three years; we do not want to bring this matter up every year, and if we can now have the subscriptions for three years, why, you will be ready to double them three years hence.

The motion of Mr. Ogden was agreed to, and the chair appointed as the committee on subscriptions, Messrs. W. W. Ogden, Charles F. Kimball and N. Albert Hooker.

ELECTION OF PRESIDENT.

The President: We will next take up the election of president. The nominations were made yesterday. The chair will appoint as tellers Messrs. C. D. Firestone and Henry Timken. The candidates are Henry C. Staver, of Chicago, and Frank L. Wright, of St. Louis.

After balloting, the tellers reported a total of 40 votes cast: 23 for Mr. Staver and 17 for Mr. Wright.

Mr. Frank L. Wright: Mr. President, I move you, sir, that Mr. Staver's election be made unanimous.

The motion of Mr. Wright was seconded, and agreed to unanimously.

The President: Gentlemen, you have elected Henry C. Staver as your president for the coming year (applause) and I appoint as a committee to escort him to the platform, Mr. Kimball and Mr. Woodhull.

Gentlemen, I have the pleasure of introducing to you Mr. Henry C. Staver, of Chicago, your newly elected president. (Applause.)

Mr. Staver responded as follows:

Mr. President and Gentlemen of the C. B. N. A.: It is a very common thing for a man, when he is elected to any position of honor, and even though the honor is not very great, to say "Thank you"; but I desire to say to you that I am truly thankful for this honor which you have conferred upon me today. And yet I realize, while it seems an honor to be elected, and it is a nice thing to talk about, that it is a far greater honor to make a good officer and a good finish; and I hope that your choice today will make you feel just as glad when the year is ended, that I have made a practical success of my duties, as you are today to have me take the position.

I further know that it is impossible for a president of any association to take the chair and succeed unless the association backs him up, comes right up close to him and helps him; and I ask now that not only the active members of this association, but the associate members, shall feel for the coming year that with them lies as much the success of the year and the next annual convention as it does with your president and your executive committee which are to direct him.

The C. B. N. A. has been in existence a good many years—I believe this is our twenty-ninth meeting—and sometimes I have found fault with it, thought that we were getting into the rut, thought that we were were getting old fashioned or falling back a little, thought we had not changed as the times had changed; but now that I am in this position, I will stop finding fault and see if we cannot be brought closer together and make the future brighter than the past. (Applause.)

I find that our membership is something like 267 active members. We ought to have not less than eight hundred members. I noticed that the chairman of the executive committee has suggested that a committee, composed of the vice presidents, should go after members. The president is going to second that, and make a personal effort towards getting more members for this association, because every manufacturer of vehicles will get the benefits accruing from coming into this convention, and having the benefit of going to the accessory trades exhibitions, gets paid many times over for his membership. It is his duty as a man in the same craft to come forward and help to support it.

I have noticed here this time quite a number of ladies who have come with the gentlemen. I want to suggest and I hope you will think about it, that when we come to our next meeting every one who has a good wife will bring her with him, and every one who has not will try to find one in the meantime. Let us raise the moral standard of the C. B. N. A. just a notch higher—we can do it, gentlemen, if you will only try. This organization, as you know, is a social one.

Mr. President, if I should talk too long, stop me, because I want to throw out some suggestions, and may not have another chance until next year. This is a social organization, strictly social; the foundation of it is social, and the accessory trades who have joined in this social feature have made it a business affair for themselves. Now, then, the accessory trades have become so large and their numbers so great that the C. B. N. A. men have become small. It is almost a case of the tail wagging the dog. I want to say to the accessory men, we want special help from you this coming year. If you have a suggestion to make which will add to our association, be frank enough to write it, either to the secretary or to any member of the association, so that the executive committee, when it comes into session, can take up those suggestions and see what is in them, and if there is any good in them, take it up.

We want to arrange so that when we come to the next meeting we will have, not only one hundred members, as we have here today, but two-thirds of all the membership at every session. This association has had grand sessions in the past and many fine speeches have been made, but many times the speakers were compelled to speak to empty seats. That is not courteous to the speakers, and is very trying to the president who is presiding. Let us see if we cannot do something to show that we can attend to the business part as well as the social part when we come to our next meeting.

In conclusion, I want to again urge upon every man in this association to make a special effort during the coming year to see that the men living in his town who are not members of this association shall become members. I will not be satisfied if we do not have an addition of 250 members next year. The question is: Will you help get them? If we do this, we can do something for our secretary that will enable him to do a good deal more work than he does. This association has not got the money it ought to have to enable the secretary to carry out his present plans, and the thing for us to do is to take hold and give it a lift such as it had never had before.

Again, I thank you, and hope to have the pleasure of meeting every one of you at our next annual meeting. (Applause.)

ADDRESS ON "COMMERCIAL EXPANSION.

The President: The next in order is an address on "Commercial Expansion," by Mr. C. A. Green, of the Philadelphia Museum.

Mr. Green spoke as follows:

After a careful survey of the foreign situation, as it immediately affects the carriage trade and allied interests of the United States, I think it best to ask, at the very beginning of this little talk on foreign trade development, that you fix in your mind two well-known proverbs:

First. "No man liveth to himself alone."

Second. "The longest way round is the shortest way home."

These proverbs, or sayings, tested by time, and accepted widely as

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rules of the highest wisdom, come home with special force to you, gentlemen, because your interest in foreign trade, at the present moment, is largely an indirect interest; and, perhaps, for some little time to come, the volume and value of your direct export trade must remain of insignificant proportions in comparison with the volume of your domestic trade.

For this reason, I now ask you to follow me in an effort to demonstrate that the surest way to improve your valuable domestic trade, is to build up some other man's foreign trade; for when getting at the heart of the text "that no man liveth to himself alone," you will demonstrate the truth of the philosophy that "the longest way round (or the method of indirection) is the shortest way home" to profitable "home" trade, and an increasing bank balance. I think, gentlemen, it is possible to demonstrate clearly two things:

First, that only by increasing the foreign market for the surplus product of American industry can you hope to increase the area of your present home market.

Second, unless this foreign trade is developed, you must face a decreasing demand for your manufactured articles in the home market.

These are serious statements, and are made only after a careful review of the situation.

Let us be frank, gentlemen, and look facts in the face. We are not here to "boom the stock market," or to make loud boast of our ability to "lick creation." We are here as clear-seeing, far-seeing, deep-seeing American business men, anxious to see things as they are, rather than as we wish they were. We wish to be optimistic. We intend to avoid pessimism; but we realize clearly that the middle path between optimism and pessimism offers, at the present moment, a compromise path, along which the nation may walk with profit financial, political and commercial.

We have been riding the crest of the wave for some time, and, gentlemen, it has been grand sport. Out in the South Sea Islands, I have watched for hours a local diversion which consists in wading and swimming out into deep water, and the coming in, with a wild abandon, on the crest of an inrushing breaker, holding simply to a small plank, in some cases merely sweeping shoreward with the water, unsupported and unassisted by other aid. It is grand sport, with superb moments, and a period when something, or somebody, wholly outside of self, is doing all the work; progress is not only rapid, but appears to be in the only direction one can move, and a cessation of movement an impossibility. But to this sport there is always a sudden end, a back wash and the necessity for a long, laborious swim out to deep water and a new supply of wave force.

The American people, in their business life and methods, have always loved this "wave riding" sport. In the early fifties, we had a mad race shoreward on the crest of the flying wave of irredeemable paper currency. Our landing on the beach was abrupt, and for some years, mind and muscle were at the supreme test, in swimming out again to a point from which we might once more assay our favorite "wave riding" pastime.

Again we had a glorious trip shoreward aided by the inflation and wild speculation following the Civil War. We bumped rather heavily on the shore in 1873, and our swim seaward again was harder than ever, because of the wreckage through which we were forced to plow our way.

Our next wave trip proved again a delightful experience, but with the same end—a sudden loss of propelling power, a sudden stranding on the bench, and a laborious swin seaward, before we could again find power to sweep in on the crest of the "good times" wave.

Thrice since then we have repeated the same experience, our swim seaward into better times, and wider powers, after 1893, testing our strength almost to the breaking point; and forcing many of us to ask if the price paid for the sport was not too high; convincing all of us, that it would be wise policy to discover, if possible, some trick by which the severe contrast between the abandon of the shoreward trip, on the crest of the wave, and the depressing and debilitating effort of the long swim to recover lost ground, might not be avoided in the future.

It is all very well, gentlemen, to glory in our present prosperity, to study with smiling face our books full of orders, and a balance sheet showing increasing profits. But we cannot live in a fool's paradise, and must not forget the lesson of recent times, as to the ease with which over-production takes place in our country. We must not forget the mighty danger that looms before our free institutions, through widespread discontent among an unemployed working class.

Can we not discover some policy, by which the alternate "hard times" and "boom times" may fuse into continuous "good things"? Discover some plan by which may be avoided a succession of disputes with organized labor, regarding increase in wages during advancing prices and plenteous orders, and a series of equally bitter contests, over the percentage of wage reduction, when economy is the order of the world's great day, and manufactured product leaves the factory often at a loss? Where lies the cure for these clearly recognized ills? Where can we find a compensating balance that will, with perfect adjustment, throw into the lean years the superfluous trade of the fat year? Create demand for labor copious and continuous, rather than spasmodic and erratic?

It is a problem, gentlemen, but I submit for your consideration the thought, that, after all, our trouble as a nation, is a trouble which has wrought ruin to many individuals—the bad policy of placing all of the eggs in one basket. The size of the basket, gentlemen, has really nothing to do with the breaking of the eggs. We have a big country—a country rich in natural resources—but we have also an immense population—a population eager to enjoy life, free spenders, but so optimistic in mental habit, that they translate too liberally the Bible injunction, "Take no thought for the morrow."

This great population must be fed, housed, clothed, educated, amused, doctored—finally buried. Who is to pay the bills? If we eliminate foreign trade, as a certain section of our people would have us, this great bill must be presented annually, with the request for prompt payment, to a beneficent Nature. To the credit of this same great Nature, in most years, the bill is promptly discharged, by the delivery into the hands of the American people of about eleven million bales of cotton twenty-one hundred million bushels of corn, six hundred million bushels of wheat, and so on down the list of crops garnered from the face of our kindly earth, and the mighty wealth drawn from below its surface. These, gentlemen, are our primary, our real sources of national wealth; for the real test of value is, what does it do to feed, to house, or to clothe man.

Now, this bounty which Nature throws into our lap each year, or drops within easy reach of our hands, can be placed in its higher condition for consumption within half of the year, at most, within three-quarters of the year. The finished product has taken on new bulk and new value, and, in its finished condition, represents more than we, as a nation, can consume. And yet, in many cases, this "surplus" is something perishable in character, which cannot be carried from year to year without serious deterioration, or, in some cases, total destruction of value. Shall this surplus be allowed to waste? For, remember, in many instances, it is not only a loss of that which might be exchanged for new wealth, but it represents an exhaustion of natural resources beyond our power to replenish. This surplus product may be enough to feed and clothe and house the people. But how will you share it with all, so that each will receive a sufficiency for his needs?

No mind his yet been able to evolve a system of government, or code of laws, under which the product of labor, and the fruits of land, will automatically separate into portions, which will mean exact justice to each individual. A time may come when such a beneficent arrangement will prevail. It does not now prevail, and we must measure the immediate future by rules of commerce, and the condition of affairs certain to prevail during that period.

Measuring things then by the present standard, this surplus wealth and product is no surplus at all, to the great majority of our people. The very circumstance that it can be produced in six or nine months, indicates that 50 per cent. or 25 per cent. at least of the only exchangeable commodity which the great majority of our people have in their possession, namely, the labor of their hand and brain, is wholly unsalable. The wages of one man, for six months, would be forced to support a family of five or eight individuals for a whole year. Even the most remunerative profession is seldom credited with a money-earning capacity equal to this. It would thus appear that we face, in *good* times, and with bountiful crops, this problem: a surplus of natural and manufactured product, but a deficit of buying power, through scant employment and short wages, on the part of the great proportion of the people.

This result, we may note in passing, is largely the direct and unavoidable fruit of the introduction of machinery; for this machinery, which consumes nothing, is able to produce that which, hitherto, required the labor of hands—hands owned by wage-earners and wage spenders—consumers as well as producers. Machinery is here. The bounty of nature is here. Our skill in production is here. They are present facts and must be faced. And remember this difficult position develops when we have good times, based upon good crops, our difficulty being inability to work an equitable *distribution of our wealth,* owing to the lack of steady employment on the part of our working class—a class which represents the majority of our buyers.

Let us go a step further, and look at conditions under bad times. Then the surplus disappears, and those who usually, out of their "luxury fund," scattered millions, are now forced to retrench, economize in every way. Economy practiced by the wealthy class produces retrenchment in those who imitate, and follow at a distance, the leaders in society; and so the disbursement of accumulated wealth lessens, and the money in circulation, with those who live from hand to mouth, become 50 per cent. less. Then follow labor disturbances, outrages against person and property which injure credit at home and abroad, and then erratic legislative measures, palliative for a time, but pernicious in their ultimate effect.

Of course, an answer may be given to much that I have urged by the statement that, as a nation, we are not trying to "live to ourselves alone," that we already enjoy, and have for years enjoyed, an immense foreign export trade. This is but a half truth—a dangerous half truth. Of what does our foreign trade consist? How does it compare, in detail, with the export trade of other nations? I do not mean the mere matching of figures, and a comparison of volume and value. I mean an analysis which separates such goods as are of the bounty of nature, from others born of the handicraft of man. For after all, we must never lose sight of the great fact that, in order to prevent the concentration of wealth in a very few hands, and the impoverishment of the great mass of buyers, we must maintain the *spending power* of the people, by continuous and well paid occupation.

Our export total of 1900 is an impressive one, 1,478 million dollars in value, but over 1,000 million of that was the gift of God, in other words, raw products. Only 29 per cent. of what we sent abroad represented the labor of our people, namely, consisted of manufactured goods. The United Kingdom, on the other hand, with an export total of practically the same as our own, shows 80 per cent. of manufactured goods against our 29 per cent. These figures are suggestive enough as they stand, but when we remember that our export of 432 million dollars value of manufactured goods, represents the export of a nation of 76 million people, while the British export of 1,144 million represents the work of 40 million people, our great dependence upon the favor of nature, and the value of England's

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wide market abroad for the produce of her peoples' hands, come home to us with startling force.

This export trade of England, let me emphasize, is world-wide in its ramifications. If crops fail in one section of the world, her trade with other sections is sufficient to render such failure but an incident;—an incident to be regretted, but one which will not seriously affect the condition of her working people. Above and beyond all, total failure of the crop at home, while it must inflict considerable loss on Great Britain, is, in truth, a loss which affects injuriously only a small proportion of her citizens. This is the reason why in England extremes between good and bad times, between full employment and scant employment, lack the awful swing which characterizes our own change from good to bad times.

Foreign trade, then, I claim, has come to be of vital necessity to every merchant, every producer, in the United States, even when such producer may not directly share in the exports. For this foreign trade offers two guarantees of a continuous spending power in the great bulk of the people.

First, it separates our markets; distributes them geographically, so widely that the ill fortune of one community, or one section of the earth's surface, will not bring disaster to any one industry within our own boundaries.

In the second place, foreign trade, taking the good and bad times of our country, and offsetting them with the good and bad times of another, is apt to produce, as a whole, a steady and slowly increasing volume of trade; a trade which contrasts favorably with the feast and famine trade which we have too often passed through in the United States.

Beyond all this, and above it in importance, foreign trade will enable us to give constant employment to the great mass of our people, and by such employment, distribute over a wider area of people and classes, the accruing national wealth. It matters greatly, I submit to you, gentlemen, whether 500 million annual increase in national wealth falls into the hands of five people, or fifty million people; for the purchasing habit of the five fortunate individuals will not be increased in proportion to their increased purchasing power; on the other hand, a widely distributed national increase in wealth, will probably be wholly disbursed during the same year by those into whose hands it falls, bringing into the market millions of quick cash buyers.

I am afraid we do not sufficiently realize the great necessity, the vital necessity, of redistributing the money of the country. When trade is confined by a system of laws, or the deep rut of commercial practice, to the limits of one land, the tendency is inevitably to concentrate productive trade in a few hands, as we have recently seen trade concentrate in the hands of trusts, with vast productive powers and vast earning capacity. This success in securing control of the productive facilities of the country, is largely the fruit of the limited area, and consequently limited competition, to which such great factors stand exposed.

Now in foreign trade, the greatest corporation in the world seems small, when matched against the competitors from all parts of the world; and in "world trade" there is apt to be, almost certain to be, a more even distribution of the ensuing profit.

What I claim, then, should be your motive for aiding the development of foreign trade is that such development will tend to mitigate the worst evils of unemployed skilled labor; that it will tend to conserve and develop the buying power of that great mass of the people, from whom you must look for the volume of your own domestic trade.

I do not think we realize, as a people, the wonderful advance made, within the memory of even the present generation, in our power to produce. Let me cite a few illustrations of our rapid growth into greatness as a manufacturing nation. Thirty years ago, we had challenged the attention, the admiration, of the civilized world because of our wonderful ability in manufactures, the fruit largely of our inventive genius, the enterprise of our people, and the readiness with which capital had taken up, and brought into actual working, the ideas of local mechanical skill. Thirty years ago, then, we had a superb transportation system, a magnificent manufacturing plant, a body of skilled labor unequaled in any other part of the world. We were considered then, even by captious foreign critics, in a position to supply our own wants, and provide a surplus toward supplying the wants of the outside world.

Keep this idea firmly in mind. Realize that thirty years is but a short period of time, and then note that since 1870 our railways have increased their mileage more than 238 per cent. Our cotton production has increased 203 per cent. Domestic cotton consumed by mills has increased 170 per cent. The coal mined has increased 700 per cent. Our pig iron output has grown 733 per cent., and our steel output from 68,750 tons in 1870 to 10,639,857 tons, or over 15 *thousand per cent.* Petroleum brought to the surface has also increased 1,150 per cent.

Such figures as these must make us pause. We cannot expect our powers of consumption to keep pace with such awful powers of production. Of course, I remember, as probably you all do, the retort of that dear old Kentucky colonel who, when informed that the State of Kentucky had produced during the year 27 million gallons of whisky, asked anxiously: "Where did we get the rest of our supply for home consumption?" It is possible that the genial colonel did not overestimate Kentucky's capacity for spirits, but, I think, even the most optimistic here present will not claim for us an appetite of equal proportions for such non-intoxicating substances as pig iron, steel and petroleum.

One thing is certain, we have reached a point where we must either curtail production, or increase consumption. We cannot increase consumption at home, because the people have already reached the maximum of their spending powers; the whole drift of argument at present, is in favor of a more limited expenditure on the part of the people, a cultivation of the habit of thrift, the accumulation of money in saving funds.

The great danger which threatens, in my opinion, is a decision in favor of curtailing production; a decision which will give skilled labor longer periods of idleness, likely to rob that labor of its skill, and sow, in the most law-abiding and law-loving section of the community, seeds of socialism, and, perhaps, of anarchy.

We hear much talk, and well founded talk of our immense dower from the hand of nature in the shape of fertile acres, inexhaustible mines, our great forests and our splendid climate. All that is said in praise of this natural endowment, is warranted, but, in the grand chorus of acclaim, touching these munificent and easily comprehended blessings, I think we are apt to undervalue the mighty wealth which we possess in our immense body of skilled labor. For, gentlemen, no other nation in the history of many has ever gathered, within such a short period of time, such a splendid body of brain directed brawn.

Our own educational facilities, and the natural aptitude of the American, it is true, would, in time, have produced a considerable body of this skilled labor. But, thanks to bad times in the old world, and the lure of high wages in the new, we have steadily drawn to our shores, during a long series of years, the finest labor the world has ever produced. It has been estimated that a large percentage of the new emigrants, arriving on our shores during a certain period, absolutely cost the country to which they were native, from $1,000 to $1,500 each to bring them to their present state of development. Just as they had reached the point where their skill was to repay the home nation for its expenditure and contribute substantially to the increased wealth of their home land, they came to us, making us a free gift of that which another nation had labored to produce. In our arts and sciences we are now splendidly equipped; but this equipment carries with it a terrible responsibility; for unless skilled labor is furnished with constant employment it rusts easily, and quickly loses that which lends it real value; or if it does remain to rust, it will pass to other lands, where labor is more constant and wage more remunerative.

I submit, in all seriousness, gentlemen, that it is policy to run a manufacturing plants of this nation for six months of the year at a slight loss, if necessary, rather than stand idle during that period—for by such a policy you are able to accomplish two results:

First. Work up into manufactured product, and thus redistribute with the buying mass, the accumulated and accumulating wealth of natural product.

Second. You secure the employment and betterment through employment of our vast body of skilled labor; so that ability to produce may not suffer through loss of tools, or the dulling of the intellectual edge of such tools.

I have taken, as the main theme of my talk, your special interest in the general welfare. I have tried to make clear why you have a direct and personal share in the development of foreign trade; what you have to gain from its development; what you risk from its decline. Before closing, I would like to add, however, that I also discover, in the near future, promise of direct trade for your particular line of manufacture.

If we go back and study closely the first growths of foreign trade in other lands, we are brought face to face, almost at the beginning of our investigation, with the great truth that the successful foreign supply nation, in the beginning, generally *lends,* rather than *sells,* goods to the new customer abroad. I use the word lend, of course, in a figurative sense. What I mean is this. In nearly all cases, you will find that a large sum of money is borrowed at some great money center of the nation, for example London, and with the proceeds of this loan, goods manufactured in the country where the loan is negotiated, are purchased and dispatched to the borrowing country. In other words, instead of loaning money, England has loaned "manufactured product" all over the world, and this, in time, has helped to develop the new customer into a productive condition which enabled purchases for cash.

This is an important circumstance because it throws an instructive and illuminating light upon our non-success, as a nation, in our early efforts to cultivate foreign trade. Our bankers have evolved one of the most magnificent systems of domestic banking the world has ever seen, but their energies have been so wholly occupied within our own boundaries, that capital has never found it expedient, or profitable to go into the outer world in search of employment for funds.

Times have changed. We now see foreign nations come to New York for loans, as in former days they visited London. Our wealth is accumulating too fast for home employment. New markets must be found for money, as well as for materials. Here lies promise, I think, of a splendid leap in the volume of our exports; for even the competitive skill of a rival nation, even a slightly lower range of prices offered by that nation, may be overcome by the pressure put upon the buyer, by the bank that gives him the money wherewith to make his purchases.

Another feature which promises much, lies in the opening out to world of the great Empire of China. Here, gentlemen, is one-twelfth of the earth's surface and one-quarter of its population. At the present time the available railways of China do not probably exceed 500 miles, but her projected lines are over 5,000. These projected lines will become actual before the century is many years older.

Now, the development of China and the consequent increase of her

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wealth, has been retarded by lack of transport facilities. The roads are so bad that thousands of tons must be carried on the backs of men. Take, for example, a case I have in mind where coal (of which China holds as great a supply as all the rest of the world combined); coal, which could be raised to the pit's mouth for 90 cents a ton but could not be transported 20 miles without adding from 500 to 600 per cent. to the cost of the article. It is the same with other mineral resources. They are valueless because transportation between producer and consumer renders their price prohibitive.

Exactly the same trouble affects the distribution of the great cereals. You will find in certain portions of China, rice imported in large quantities, another section of China exporting rice; the home market being independent on the foreign market for a buyer, and equally so for the seller, simply and solely because transport facilities, owing to the lack of railways, and the absence of good roads, makes interchange between sections often impossible.

It seems to me a probability of the near future is that railways will be opened in China and that following the opening of these railways, will come a betterment of the ordinary roads throughout all parts of the Flowery Kingdom. This will develop a demand for wheeled vehicles. It will produce a demand for the better class of carriages, and open a new market for your product.

China will not only have roads over which to drive carriages, but it will have, owing to the new wealth which these roads will bring from abroad, ability to pay for the "carriage luxury" as well as the "carriage necessity."

In conclusion, may I add, gentlemen, that your trade is one which is founded both on necessity and luxury—a luxury which is in itself almost grown into a necessity. For while power other than the horse is being introduced to our country roads, the love of the horse implanted in mankind waxes rather than wanes. In *"weal or woe,"* man is faithful to his four-footed friend. Indeed, I might add, that man is never happier than when over the "wheel," and behind the "whoa."

On motion of Mr. Kimball the thanks of the association were extended to Mr. C. A. Green, of the Philadelphia Museums, for his very agreeable, interesting and instructive address.

REPORT OF COMMITTEE ON NOMINATIONS.

The President: The next business in order is the report of the committee on nomination, Col. W. T. Jones, chairman.

At the request of Mr. Jones, chairman, Mr. Charles F. Robinson, of Amesbury, Mass., read the report as follows:

CINCINNATI, October 23d, 1901.

Mr. President and Gentlemen of the Carriage Builders' National Association:

Your committee appointed to nominate four members of the executive committee, to take the place of four of the present committee whose terms have expired, also a trustee for a term of five years for the Technical School in New York, and secretary and treasurer of the association, and vice-presidents, beg leave to submit the following names:

EXECUTIVE COMMITTEE.

Charles A. Carlisle.....South Bend, Ind.
J. D. Dort.....Flint, Mich.
A. G. Brunsman.....Cincinnati, O.
N. Albert Hooker.....New Haven, Conn.

TRUSTEE FOR TECHNICAL SCHOOL.

(For a Term of Five (5) Years.)

E. M. Hotchkiss.....Newark, N. J.

SECRETARY AND TREASURER.

Henry C. McLear.....Wilmington, Del.

VICE-PRESIDENTS.

William H. McIntire.....Auburn, Ind.
Frank P. Stone.....Chicago, Ill.
F. W. Babcock.....Watertown, N. Y.
L. F. Weaver.....San Francisco, Cal.
G. H. Burrows.....Brockville, Ont.
J. C. Lund.....Racine, Wis.
David A. Ainslie.....Richmond, Va.
James W. Renwick.....New York City, N. Y.
Owen Lilly.....Memphis, Tenn.
H. F. Keachline.....Philadelphia, Pa.
G. A. Matthews.....Jackson, Mich.
R. Edwin Joyce.....Washington, D. C.
R. E. Gardner.....St. Louis, Mo.
W. H. McCurdy.....Cincinnati, O.
Charles F. Robinson.....Amesbury, Mass.
Col. W. T. Jones.....Carthage, N. C.
W. E. Weld, Jr.....New Haven, Conn.
C. S. Caffery.....Camden, N. J.
George L. Summers.....Barnsville, Ga.
E. A. Rhodes.....Marshalltown, Ia.

Respectfully submitted,

W. T. JONES,
CHARLES F. ROBINSON,
H. H. TIMKEN,
W. H. MCCURDY,
R. EDWIN JOYCE,
Committee.

Mr. Robinson: I wish to say a word in regard to the names as you find them here for vice presidents. I am one of your committee, and when we arrived at the name of Massachusetts, the speaker's name was suggested, and before I had time to say a thing the other members of the committee, and they were four to one, said the name should go in.

The President: The nominations will go over, under the rules, to be voted on tomorrow.

NATIONAL RECIPROCITY CONFERENCE.

The President: We will now listen to a communication from the National Association of Manufacturers which I will ask the secretary to read.

Carriage Builders' National Association, Cincinnati, Ohio:

Gentlemen: In pursuance of a suggestion advanced by the National Association of Manufacturers at its annual convention in Detroit in June, 1901, and subsequent action by the executive committee of that association, arrangements have been made for the holding of a national reciprocity conference in Washington on November 19-21. The sole purpose of this conference is to discuss the expediency and practicability of the broader application of the principle of commercial reciprocity as a means of expanding foreign markets for American products, without sacrificing the interests of any of our industries. The object of this convention is to ascertain accurately the views of representative manufacturers on this subject and to formulate, if possible, some practical suggestions for such legislation or diplomatic negotiation as may be necessary to establish more intimate commercial relations between the United States and other nations.

Your organization is invited to participate in this reciprocity conference by the appointment of delegates in accordance with the foregoing statement of purposes and the accompanying rules to govern such appointments.

This is a matter of such vital importance to the entire business interests of the country that it is hoped that you will give your earnest aid in making this movement a success and to that end appoint as delegates men who are thoroughly interested in the matter and willing to attend the convention and participate in its deliberations.

Trusting that this matter will receive your immediate attention, I am, very truly yours, THEO. C. SEARCH,
Chairman of Committee of Arrangements.

Mr. Carlisle: That calls out, I believe, a very important thought, that ought to require the careful attention of the members of this society; and I move you, sir, that a committee consisting of our full proportion be appointed by the chair to go to Washington and represent this association in the deliberations that will be had there in the convention on reciprocity.

The motion was seconded by Mr. Kimball and agreed to.

Secretary McLear: That will comprise a committee of ten, that being our allotment.

The President: It will be necessary for us to find out, of course, who will go.

On motion, adjourned to 2 o'clock p. m. Thursday, October 24th.

THIRD DAY.

CINCINNATI, October 24, 1901.

The convention met, pursuant to adjournment, at 2 p. m., October 24; Mr. F. B. Judkins, the president, in the chiar, and Mr. Henry C. McLear, the secretary, in his position.

ADDRESS BY MR. C. A. WILLEY ON "PAINTS."

The President: The first order we have is an address by Mr. C. A. Willey, of New York City.

Mr. Willey spoke as follows:

Mr. President and Gentlemen of the Carriage Builders National Association: I certainly did not think after the dose I gave you a year ago that you would ask to have it repeated.

However, I believe we cannot talk this matter of painting over too much, and for myself, I do not believe the time will ever come when I shall not enjoy talking paint and methods of using it with any one I happen to fall in with, from the apprentice boy up, if he happens to be at all interested in the subject; and it seems to me as I travel about among the carriage trade, that there is no department of that business where there are so many different ideas, as exist regarding the painting, and there is a valid reason for this, in the fact that no two factories handle their work the same.

Therefore, it is impossible to lay down a rule that will suit all conditions, and it often happens, after talking hours with a carriage

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builder about the beauties of one of my pet schemes for painting his work, he will upset the whole thing by one word regarding the conditions under which they must handle their work which do not at all fit in with my pet plan. So, therefore, any stock, plan or system to be successful for general use must be adjustable in order to meet all these requirements and conditions.

What I wish to talk of in the few minutes alloted to me is the trouble on running parts, known as chipping and ring-cracking of the paint and varnish.

This trouble is so persistent that when you are trying the hardest to overcome it, the very job you are paying particular attention to will sometimes turn out the worst. The causes are numerous. Coats that dry too quickly, and too many of them, are pretty sure to chip. The edges of the springs, if too much paint is left on them, will nearly always come off, when they come to be loaded. This part of a spring really needs no paint except an elastic coat of color, and a finishing coat of varnish. I know of one builder of fine work who scrapes the edges of the spring clean, just before the work is finished, and recolors them with a gloss coat of color.

This is much easier, he says, than having to do them over after the work is finished. But what I think would be still better would be to put no lead coats on those parts.

Another great cause of the trouble is too many coats of Japan color. A running part never should have more than one absolutely flat coat of Japan color, and it would be just as well if that could be dispensed with in some way. The first coat over the filling coats should be what I might term a preparation coat, that should be elastic enough to require drying over night. A coat of this description will not only take the place of the first coat of color, but it will protect the edges that have been cut through in the sanding, and over this the color should cover perfectly. Another prolific cause of chipping and ring-cracking is in using a color and varnish or a rubbing varnish that is too quick drying. If there is not time to use a good elastic varnish, you had much better take a little more pains in getting a smooth surface with your pigment coats, color with a gloss coat that is elastic, and that can be applied thin with a soft brush, and will therefore dry over night. Finish on that, and you will have a piece of work that will not chip or ring-crack. Color and varnish help very little to make work smooth, *unless it is water rubbed,* any more than a coat of lead does that you do not sand, or rough-stuff on a body that you do not rub. Quick rubbing varnish will do very well on a body but not on a gear. That part of the carriage must be painted elastic all the way up, in order to stand the twisting and jarring a gear is subject to, without cracking and chipping. Vibration cracks, as some call them, that appear in the throat of the spoke, and also ring-cracks farther up the spoke are more common on fine work, because of the fact that there has been more varnish used in getting the high finish that they must have. Therefore, I believe the less varnish used on a gear the better.

I remember when I first commenced my trade, we used to make our gears perfectly smooth with lead coats; color them carefully, stripe and then finish them with one coat of finishing varnish, and I can assure you on that work there was no cracking or chipping.

Now, you may say that work would not be smooth enough for the work of to-day. I can assure you that it was smooth enough for the best work, on account of the great care taken with the under-coats, and I believe if more care were taken to get work smooth close to the wood, and the labor put on one coat that is now put on two—or nearly so—the results would be much better as to wearing qualities.

For every coat you can leave off a running part and have it filled, you have by just so much lessened the possibility of future trouble in the way of its coming off or cracking.

Another thing, please remember that a good piece of painting does not consist in the number of coats, but the skill used in applying them, and which makes it possible to do smooth work with few coats. It makes no difference whether it is on the cheapest or best work—a coat of paint that can be dispensed with, does more harm than good. Besides, there is the cost of stock and labor, which amounts to considerable and will certainly more than pay for the extra pains taken in applying.

The main trouble I run against in advocating elastic stock on gears is in the smaller shops, where they work on a few orders at a time, and therefore must apply several coats in a day, which is almost impossible to do with safety, with some colors. The larger builder has the advantage in carrying through a greater number at a time and handling them but once a day—enabling them if they want to, to use something more staple than a Japan color that is made to dry in ten minutes.

I believe that after the priming coat it is possible to handle the work every day and turn out work that will not chip or ring-crack, and if few coats are used, and every one from the wood up counts for durability, the job would not be many days in process, and you will certainly get good work.

That is all there is to it, on gears, and if you will follow that right through I do not think that your jobber will come back at you with troubles in regard to chipping and that kind of thing. That's all I have to say at this time. I am very much obliged to you, gentlemen, for your attention.

The President: I would state that Mr. Willey has kindly consented to answer any questions that the members of the association may want to ask him.

Mr. Woodhull: What is the best method for putting on lead? The old fashioned method was to put it on with a brush and rub it in with the hand. Is that used at all?

Mr. Willey: I believe that that is the best way in the world of applying lead, because you can put on a thinner coat, and make it fill better by rubbing. With a coat of priming and any undercoat you are going to put on the gear, it is the only way you can get it into the grain. I even advocate it in applying the priming coat. By doing that way you get your wood filled up with a very light thin coat, whereas by the old method of putting on brush coats and sanding, you have to have three or four of them in order to accomplish the same result.

Mr. Woodhull: What do you think about rubbing the priming coat on with a rag and then filling up with lead?

Mr. Willey: You know, Mr. Woodhull, what I think about that. I have talked it to you a great many times. I think it the finest way in the world to put on the priming coat. I am advocating it right along.

Mr. Woodhull: I asked that more for the benefit of the others, Mr. Wiley, than for myself.

Mr. Wiley: Yes. I am surprised to find right around in the State of Ohio, in places not more than fifty miles apart, that you find one man who has been doing that for years and knows the benefit of it, and then again another man who has never heard of it, and does not know anything about it. It is really the only way to put on a coat of priming and have it even, and get it into the wood. When one sees it done they realize that it is the handiest and easiest way to apply priming. The method of painting gears I consider just the reverse of the handling of paint on bodies. We want a good solid foundation on bodies, something that will hold the different coats; but on a gear it must be elastic or it will not stand. All the trouble from paint coming off is caused by the priming coat having had too much turpentine in it or being too hard drying.

Mr. Woodhull: Excuse me if I am interrupting you, Mr. Willey. We have been putting on our priming coat with a rag for the last five years, following that up with a coat of lead. We have never had any trouble with our coat of lead and the undercoat. Any trouble that we might have had came from coats on top of that. We have gotten the best results, with less labor and less expense, in that way than by any method that we ever attempted to employ.

Mr. Willey: I would like to say that when Mr. Woodhull first spoke to me about having something to say about paint to the carriage builders at these conventions, he made the suggestion that he thought it would be a good thing, in order to bring out argument, etc.; but so far I have not found this to be the case, as no arguments were brought out. For myself, I would be very glad if any one interested in this matter would discuss it. In fact, I think it would be interesting to all of us if we had two or three speakers who would take up this subject and argue it before the convention, even if they got into a regular scrapping match. It would be a good thing in the end, I think. There are a good many who, if you have something to say about these things, will simply go around the corner and criticise it instead of talking right out in meeting. Comments on the side do not benefit those present here. If they would come out with their arguments in open convention we might learn something by it.

Mr. Ogden: Is it possible to eliminate lead from material used in painting gears and get good results?

Mr. Willey: I think it can be partly, but I do not know of any pigment that has the closeness that the lead possesses. You can take almost anything else in the way of mineral paint fillers and grind them for a great time, yet you cannot get them to that impalpable fineness that you can lead; and the finer it is, and the closer it lies, the better it will go into the grain. Another thing, I think that lead has an elasticity to it that a great many other pigments do not have; but I do not believe that lead itself,—that is, clear lead—is any better than a combination of perhaps two or three different things, just the same as with lead used in painting houses, it is generally known in the painting trade that a combination of zinc and lead is a great deal better than either one of them clear. I think the same thing applies to carriage stock.

Mr. Carlisle: Do I understand that you advocate the use of reground lead?

Mr. Willey: I do not think that any of the keg lead that we buy,—regular oil lead—is ground quite fine enough for carriage work. I think where we use it on running parts, the finer it is the better it goes into the grain and the smoother it makes the surface. It has always been my habit to regrind it when in the shop, however. I prefer to take my dry lead and grind it, and then you know what you have got, the oil you have got, and all about it.

Mr. Mullholland: I move that a vote of thanks be extended to Mr. Henry P. Jones and Mr. C. A. Willey for the excellent addresses they have given us.

On motion a vote of thanks was tendered to both Henry P. Jones and Mr. C. A. Willey.

The motion was seconded and carried.

REPORT OF THE EXECUTIVE COMMITTEE.

President Judkins: The next thing is the consideration of the report of the executive committee. There are four things that should be taken up: The first is in regard to the meetings, whether we shall have one session each day; whether the one session shall be in the forenoon or the afternoon, and whether we shall have two days' session or three. The executive committee also have a recommendation to make regarding designs.

Secretary McLear: Some years ago it was the custom of the association to hold all of its sessions in the morning, commencing at 10

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o'clock, or thereabouts, and lasting until half-past 12 or 1 o'clock, and having the afternoon to visit the exposition or any place they wished to go. Some of the members thought we would do better to have the meetings in the afternoon. We have tried that plan now for three years, in Indianapolis, New York and here, and we desire to know which the members of the association prefer—whether the morning session is more suitable or the afternoon session. If the afternoon session is not satisfactory, we will continue as we have been doing.

Mr. Woodhull: In order to get an expression on the subject, I would offer the resolution that we continue the sessions in the afternoon. Seconded.

The motion of Mr. Woodhull was seconded by Mr. Mulholland and after a thorough discussion the president said the motion of Mr. Woodhull was that we have one session a day, and that be in the afternoon. Mr. Mulholland's amendment is that we have that one session in the morning. All in favor of having the sessions in the forenoon say aye.

The amendment was agreed to.

Mr. Bailey: I think we ought to make this thing complete. If we are going to have a good big session ourselves in the morning, we ought to agree to turn around in the afternoon and give the exhibitors a good meeting.

I, therefore, move that all contracts for space in the coming exhibition distinctly state that the exehibit hall will not be opened until 12 o'clock. I don't think it could be opened from nine to ten. I missed yesterday's session myself by being up there and losing track of the time. If we are going to have our sessions in the morning, we can attend, and then open up their afterwards.

The motion was seconded by Mr. Kimball, and carried by unanimous vote.

The President: The next matter for consideration will be the designs for competition.

Mr. Carlisle: Mr. Chairman and gentlemen, this seems to be an opportunity for the advancement of improved ideas, or the expansion of old ideas, perhaps. Our newly elected president has given the stamp of his approval to principles that will doubtless result largely to the benefit of this association. He has been dubbed "the Cyclone of Chicago," and when that is turned loose you will note its splendid results. (Applause.) The executive committee, after very careful deliberation, presented as an advanced thought the question of competitive awards, and with that point in view I beg to present and offer the following resolutions; and I hope they will be riddled full of holes. I simply offer them in the hope of bringing out your best judgment and your best thought on how the membership of this association can be increased. It seems to me that we fail when we fail to reach a larger number of manufacturers of the industry we are here to represent; and the paramount question is: How can we reach them? How can we cause the principals of these establishments who come here to bring to this convention their superintendents. the foremen of their paint shop and their wood shop and the various departments of their business? If we can find the solution of this problem, we are going to find the solution that will make this association the success it ought to be.

I offer for your consideration these resolutions bearing upon this subject:

Resolved: 1st. That the general scheme outlined and recommended by the executive committee for the awarding of prizes be adoptd.

2d. That a jury of awards of five carriage manufacturers be appointed by the chair, and that the jury appointed be authorized to fill their own vacancies, and the majority of said jury shall be conclusive respecting all awards.

3d. That all competitors shall submit their designs as directed by the executive committee, who shall take charge of them and hold and exhibit them privately at the annual convention.

4th. That no person shall be admitted to the exhibition room unless he be an active member of the association in good standing, or a duly authorized representative of such.

5th. That at the close of the convention the designs submitted be sold to the highest bidder.

6th. That the exhibits for competitive awards be under the personal supervision of the superintendent of the Technical School.

7th. That full discretionary power be, and is hereby, given to the executive committee, to change, determine, enlarge or eradicate any measure of this resolution, or any other matter pertaining to it.

I move their adoption.

The Secretary: Permit me to read an outline to you, in line with what Mr. Carlisle has offered, and you may better understand what you are asked to vote on. It is a mere suggestion, so as to give you an idea of what is proposed.

The secretary then read the following, with comments:

SPECIAL PRIZE OFFERS.

The Carriage Builders' National Association makes the following proposition to the carriage builders of the United States and their employed mechanics.

For the purpose of getting original ideas and improvements in new designs that will be of value to the Carriage Builders' National Association of the United States, the executive committee, by authority granted them at the convention held in Cincinnati, October, 1901, offer the following prizes:

PRIZES TO BE AWARDED.

First. For the best design of a one-seat carriage composed of original outlines or a combination thereof, known as a buggy, runabout or any other one seat riding wagon of that special kind.

First prize	$40.00
Second prize	25.00
Third prize	15.00
Fourth prize	10.00

Second. For the best design of one seat carriage composed of original outlines or a combination thereof of a Stanhope or single seat surrey.

First prize	$40.00
Second prize	25.00
Third prize	15.00
Fourth prize	10.00

Third. For the best design of a two seat carriage composed of original outlines or a combination thereof, known as a straight bottom or cut under surrey, including the cut under phaeton.

First prize	$50.00
Second prize	25.00
Third prize	15.00

Fourth. For the best design of a rockaway or depot wagon, with stationary top and extension over front seat, low or high doors, or any other carriage of that kind, composed of original outlines or a combination thereof.

First prize	$50.00
Second prize	25.00
Third prize	15.00

DETAILED DESCRIPTION RELATING TO EXECUTION OF DESIGNS.

Each design must be a pen drawing in India ink (line shading only) in perspective, showing the complete carriage except the color of painting, on four-ply bristol board, the scale to be one inch to the foot.

Each perspective drawing must be accompanied with a working draft, also drawn on four-ply bristol board, one inch scale; composed of a side, front and back view, including the working lines on side elevation and cant below the base line of body.

The wheels, springs and other parts should all be in the exact positions, showing also how the wheels turn under the body, reaches or side bars.

Originality of design, completeness of details, including mechanical accuracy and taste in its execution, will all be specially considered by the jury in awarding the above prizes.

CONDITIONS.

The above mentioned prizes will be subject to the following conditions:

First. Competition for the prizes is open to any individual in the United States.

Second. All accepted drawings are to become the property of the Carriage Builders' National Association, and subject to their disposal. All drawing in competition not receiving a prize to be returned to the competitors if desired, after the association has made a plate from same for their special book on designs.

Third. A special committee on prizes will be appointed, to whom all the drawings and plans will be submitted, and this committee will award the prizes to those who in their judgment are entitled to them, and their decision will be final.

Fourth. Any of the above named prizes may be withdrawn at the discretion of the committee on awards, provided the drawings offered in competition do not in their judgment merit such recognition.

Fifth. All questions that may arise not covered by the above statement of the conditions governing the offers, shall be decided by said committee on awards.

Sixth. All offerings for the above prizes must be sent post paid to Mr. ——— ———, on or before October 6, 1902.

A decided opposition was manifested to the fifth clause of Mr. Carlisle's motion—the selling of the prize drawings to the highest bidder. Mr. Burrows and Mr. Mulholland each offered motions looking to the striking out of the objectionable clause. Mr. Mulholland withdrew his motion and Mr. Burrows' motion to strike out clause 5, and leave the matter to the executive committee, was adopted by a unanimous vote.

LOUISIANA PURCHASE, EXPOSITION AND WORLD'S FAIR.

The President: The next is the matter of the Louisiana Purchase Exposition and World's Fair in 1903, and the suggestion of the executive committee that this association appoint a committee to represent our association in preparing for this grea tworld's fair.

Mr. Hooker: I move that the executive committee be empowered

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to appoint a committee of five, or such number as they see fit to represent us at the World's Fair at St. Louis in 1903.

The motion was seconded.

The President: It is moved and seconded that the executive committee appoint a committee of five to attend to the interests of the C. B. N. A. in preparation for the World's Fair. Is that the substance?

Mr. Hooker: Yes.

The motion was agreed to.

Mr. Kimball: I have a resolution to offer that will be of interest to the carriage builders.

WHEREAS, In 1872 Congress, after a thorough and careful investigation removed the duty of 10 per cent. which had been put on hides to meet the exigencies of the Civil War, and placed imported hides on the free list, where they remained twenty-five years undisturbed by the tariff bills constructed by McKinley, Wilson and Dingley.

WHEREAS, This removal of the duty enabled the tanner to secure his raw material on equal terms with other leather-producing countries, and so decreased cost of production as greatly benefited our users of leather, and so stimulated the export of leather fabrics that they showed the largest percentage of increase of the twenty-four staple manufactured products exported from 1868 to 1898, being an increase of .1392 per cent.

WHEREAS, The placing of an import duty of .15 per cent. on hides in 1897 was not favored by either of our great national parties, was against the strong protest of Hon. James G. Blaine in 1890; was omitted from the McKinley bill, also the original Dingley bill as adopted in the House, and was only incorporated in the tariff bill of 1897 through an amendment of Senator Jones of Nevada, and adopted as a caucus compromise to secure the vote of silver senators, thought necessary for its adoption.

WHEREAS, This compromise placed a heavy burden on all our population—as all our people are in some way affected by the increased cost of leather—has disturbed our home trade; has interfered with our export trade of leather and leather fabrics, and is now causing such disturbance of values as is becoming dangerous to those manufacturing interests which are large users of leather.

WHEREAS, The tariff bill refunds to the tanner the duty paid if the resulting leather is exported, our foreign competitors are able to purchase our leather at so much less than our home manufacturers as to place us at serious disadvantage in competing with them on foreign trade.

WHEREAS, Foreign hides are a necessity in the production of leather for carriage manufacturers, our country not producing sufficient for requirements; to increase cost of our material is to the prejudice of the labor element in production.

The duty is not needed for revenue, nor does it furnish protection; does not increase the home production of hides, but increases the cost of leather fabrics and becomes a burdensome tax on our own people. The true status of the question was clearly and forcibly stated by that wise statesman, the Hon. James G. Blaine, in his letter to the chairman of the Way and Means Committee in 1890, when a duty on hides had been suggested: "It is a great mistake to take hides from the free list, where they have been for so many years. It is a slap in the face to the South American with whom we are trying to enlarge our trade. It will benefit the farmer by adding 5 to 8 per cent. to the price of his children's shoes. It will yield a profit to the butcher only—the last man that needs it. The movement is injudicious from beginning to end—in every form and phase. Pray, stop it before it sees light. Such movement as this for protection will protect the Republican party into a speedy retirement." Therefore, be it

Resolved, That the Carriage Builders' National Association, in convention assembled at Cincinnati, Ohio, this 23d day of October, 1901, earnestly petitions our National Congress, at the earliest opportunity to remove this unnecessary duty on imported hides, and again place them on the free list.

Resolved, That a printed copy of the preamble and resolutions be mailed by the secretary to each member of the Senate and House of Representatives on the convening of the National Congress in December.

Mr. DeGolyer: Mr. President, before taking action upon the resolutions, I for one would like to hear from Mr. J. F. Taylor, of the American Oak Leather Company, of this city, who is present with us, and who, I think, can give us some ideas that you will be interested in listening to. (Applause.)

After an interesting discussion the question was called for, and the resolution adopted unanimously.

Mr. Laughlin: I then move that the committee appointed to attend the convention to consider commercial reciprocity, which will meet in Washington next month, be instructed to lay before the convention the adoption of this resolution. It may accomplish what these gentlemen wish, and at the same time form the basis of some commercial reciprocity treaties.

The motion was seconded by Mr. Carlisle and agreed to.

ADDITIONAL SUBSCRIPTIONS FOR THE TECHNICAL SCHOOL.

Mr. Ogden, on behalf of the committee appointed yesterday to solicit further subscriptions for the Technical School, announced additional collections. (See page 353.)

The President: The next business in order is the election of officers as nominated by the committee yesterday.

For vice presidents the following have been nominated:

William H. McIntire, Auburn, Ind.
Frank P. Stone, Chicago, Ill.
F. W. Babcock, Watertown, N. Y.
L. F. Weaver, San Francisco, Cal.
G. H. Burrows, Brockville, Ont.
J. C. Lund, Racine, Wis.
David A. Ainslie, Richmond, Va.
James W. Renwick, New York city, N. Y.
Owen Lilly, Memphis, Tenn.
H. F. Keachline, Philadelphia, Pa.
G. A. Matthews, Jackson, Mich.
R. Edwin Joyce, Wasington, D. C.
R. E. Gardner, St. Louis, Mo.
W. H. McCurdy, Cincinnati, O.
Charles F. Robinson, Amesbury, Mass.
Colonel W. T. Jones, Carthage, N. C.
W. E. Weld, Jr., New Haven, Conn.
C. S. Caffrey, Camden, N. J.
George L. Summers, Barnesville, Ga.
E. Rhodes, Marshalltown, Ia.

Mr. Woodhull: In accordance with our general custom, I move you, sir, that the secretary cast the ballot of the association for the gentlemen nominated.

The motion was seconded and agreed to unanimously, and the secretary reported the vote of the association as cast for the nominees for vice presidents.

The President: The members of the executive committee nominated are as follows:

Charles A. Carlisle, South Bend, Ind.; J. D. Dort, Flint, Mich.; A. G. Brunsman, Cincinnati, O., and N. Albert Hooker, New Haven, Conn.

Mr. Woodhull: I offer the same motion that the secretary cast the vote of this association for the candidates named.

The motion was seconded and agreed to unanimously, and the secretary reported the vote of the association as cast for the nominees for the executive committee.

The President: We have another nomination to act upon, which is always a great pleasure to us, the nomination of Mr. Henry C. McLear for secretary and treasurer. (Applause.)

Mr. Mulholland: I move, you, sir, that the president be authorized to cast the vote of the association for Mr. McLear.

The President: I so cast your vote, and you have re-elected your secretary and treasurer. (Applause.)

On repeated calls Mr. McLear responded as follows:

Mr. President and Gentlemen of the Association: If I had the voice of my dearly beloved friend, Mr. Emerson, or Mr. Carlisle, and the wisdom of our friend, Mr. Kimball, and some of the other gentlemen who have so eloquently addressed you during this most successful convention, the best we have had in point of attendance and interest manifested by the members since the famous convention of 1893, I would feel less diffident in responding.

I wish to congratulate you upon the success of this convention, for as far as the business meetings are concerned, it has been one of the best during the last ten years. Great interest has been shown by all, and we have had some of the best speeches and addresses that we have ever had. And this impresses upon me the fact that if we have the best interests of our association at heart, we must provide good addresses and interesting sessions, and then we will have all the attendance that can be desired.

I desire to thank you very much, indeed, for the kindness you have shown me personally. It has been a great pleasure to serve you. I have given you the best I possibly could. Your encouragement has been everything that could be desired. I hope that next year, wherever you conclude to go, we shall have a still more interesting convention.

I thank you for your kindness, and wish you long life and happiness. (Applause.)

The President: We have one other office to fill. The committee has nominated Mr. Hotchkiss as trustee for the Technical School for five years.

Mr. Mulholland: I move that the secretary cast the ballot of the association for Mr. Hotchkiss.

The motion was agreed to and the ballot cast accordingly.

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The President: Next comes the report of the committee on exhibits. Mr. Pease will read the report.

Mr. Pease read the report of the committee as follows:

Mr. President and Gentlemen of the Carriage Builders' National Association:

Your committee on exhibits have attended to their duty and submit the following report:

The space occupied by exhibitors is as large, if not larger, than at any previous convention. The exhibits are nicely arranged, with broad aisles between, allowing plenty of room to move about and examine the many articles shown, which is appreciated by all. The exhibitors seem to be well satisfied with the arrangements made for their accommodation. The number of exhibitors is so large that it is impossible to specialize, and it will not be attempted. If special mention were made of every one this report would be so long that no one would attempt to read it. The number of new and useful inventions is fully up to the average of former years, and the general improvement in the quality of goods shown is very pleasing, which fact is proof that the makers of the different parts entering into the construction of carriages are fully awake to the needs of the carriage builders, and are ready to supply those needs.

The Technical School exhibit is fully equal to previous years, although fewer drawings are shown, owing to the lack of space—there being only five full-sized working drawings, although many more were brought from the school to be exhibited. Several scale and prospective drawings in colors are specially worthy of mention. Besides these there are some thirty or more other small drawings, which include free hand studies, geometrical problems and scale drawings of carriages, all made by pupils of the school.

We feel that the exhibit shows the school to be in as prosperous condition as ever, and worthy of your most liberal support. We believe it to be in good hands and properly managed.

In conclusion, we beg to express the opinion that while every possible effort should be put forth for the convenience and comfort of exhibitors, these things should in no way detract from the interest which every one will agree is vitally important to the welfare of the Carriage Builders' National Association.

Respectfully submitted,
ANDREW F. JOHNSON.
FRANK E. PEASE,
HOWARD S. MILLER.

On motion the report was received and ordered placed on record.

GREETINGS FROM THE INSTITUTE OF BRITISH CARRIAGE MANUFACTURERS.

The President: We have a letter from the Institute of British Carriage Manufacturers, which the secretary will read.

The secretary read the following:

LONDON, September 23d, 1901.

Dear Sir:

At our Bristol meeting the following resolution was passed, which I was instructed to conyev to you.

"*Resolved,* That the members of the Institute of British Carriage Manufacturers, assembled at the Fourteenth annual autumnal conference, held at Bristol on the 17th, 18 and 19th, September, 1901, convey their greetings to their brethren, the members of the Carriage Builders' National Association of the United States, and condole with them in the great loss their nation has sustained in the untimely and cruel death of their revered and much respected Presidnt.

Respectfully yours, HAROLD E. PERRIN, Secretary."

Henry C. McLear, Esq., Carriage Builders' National Association, Wilmington, Del., U. S. A.

Mr. Kimball: In reply to the very kind letter of greetings, I offer the following resolution:

Resolved, That the members of the Carriage Builders' National Association of the United States of America, assembled at the 29th annual convention, held in Cincinnati, Ohio, on the 22d, 23d and 24th days of October, 1901, convey their greetings to their brethren, the Institute of British Carriage Manufacturers, and beg to assure them that we are profoundly touched by their kindly remembrance and sympathy in the great loss sustained by this country in the death of our respected President, William McKinley.

But a few months since, we sincerely mourned with our British friends, in the death of their revered and good Queen Victoria, and we trust that the sorrow and sympathy existing now between the two great nations, will cement more closely, the ties that bind us together.

The motion of Mr. Kimball was seconded and agreed to unanimously.

REPORT OF THE COMMITTEE OF OBITUARY RESOLUTIONS.

The President: The report of the committee on obituary resolutions will be presented and read by Mr. Lowe Emerson, chairman.

Mr. Emerson read the report of the commitee as follows, and it was adopted by a rising vote of the association:

IN MEMORIAM.

WHEREAS, Since the last annual meeting of this association its members have been deprived by death of the companionship of some of its most warmly esteemed associates, namely:

Honorary member—I. D. Ware, Philadelphia, Pa., January 31, 1901. Age, 72.

Active members—Jerome Stivers, New York, January 27, 1901. Age, 54. G. Lemley, Youngstown, O., July 21, 1901. Age, 61.

Associate members—J. B. West, Rochester, N. Y., October 22, 1900. Age, 67. William D. McCracken, Cincinnati, O., December 19, 1900. Age, 58. C. Bauer, Cincinnati, O., January 8, 1901. Age, 53. James M. Duffy, Eldred, Pa., October 17, 1901.

All of whom have left memories that will be warmly cherished, and some of whom have left a marked and lasting obligation for their unselfish devotion and enlightened liberality in promoting the welfare of this association. Be it, therefore

Resolved, That we make the most fitting recognition of the valuable services that they have rendered, and that we express the deep obligation that the association feels itself under, coupled with the expression of its sense of bereavement at the loss sustained; also, that the resolution be entered upon the minutes, and that a copy thereof be transmitted to the family of each.

LOWE EMERSON,
H. P. JONES,
HENRY TIMKEN,
Committee.

THANKS TO THE TRADE JOURNALS.

Mr. Burrows: It has been a custom—and often that which is a custom becomes merely form and ceremony—but in the case of the resolution I have to offer I think it ought to be more than a mere matter of form.

I move a vote of thanks to those enterprising gentlemen of the trades journals who do so much for us constantly. I think I can honestly say that while too often trade journals are a fiction and an infliction gotten up purposely to speculate upon the necessities of a trade, in the case of the carriage journals they really are a credit to any trade. They are the leading journals of the country in their line. I feel we are under deep obligations to them, and especially to the *Carriage Monthly.* I move a vote of thanks for their kindness, consideration and good work in our behalf.

The motion was seconded and agreed to unanimously.

THANKS TO THE LOCAL COMMITTEE.

Mr. Woodhull: I think it is most fitting, as we are offering resolutions of thanks, that we offer our most sincere thanks to the local committee for what they have done to make the stay of our association in Cincinnati extremely pleasant. I do not know of any occasion in any city where we have met with a warmer reception or where more has been done in the interest of our association. Therefore I move that the thanks of the association be extended to the local committee for the services they have so cheerfully and pleasantly rendered the association.

The motion was seconded and agreed to unanimously.

DELEGATES TO RECIPROCITY CONVENTION.

The President: Your chairman appoints the following gentlemen as delegates to the reciprocity convention in Washington: Messrs. Chas. A. Carlisle, E. W. M. Bailey, W. W. Ogden, R. Edwin Joyce, D. M. Parry, Burton J. Westcott, H. C. Staver, Geo. H. DeGolyer, W. A. Sayers, N. Albert Hooker and James F. Taylor.

The committee is empowered to fill any vacancy that may occur in their number.

FREIGHT COMMITTEE.

The President: The chair also appoints the following freight committee for the coming year: Messrs. George H. Babcock, W. A. Paterson, C. D. Firestone, C. F. Worthen and A. G. Brunsman.

SELECTION OF PLACE OF MEETING.

The President: The next business is the selection of the place of meeting of our convention next year. Our secretary has some invitations to read.

The secretary read letters from Detroit, Mich., and Wheeling, W. Va., inviting the association to hold its next annual convention at those places. On a vote Detroit was selected, after which the meeting adjourned *sine die.*

EXHIBITS IN MUSIC HALL.

The exhibitors did not all get their goods in order even by Tuesday morning, but by Wednesday everything was in shape, and the hall presented an animated appearance. On Wednesday morning it appeared to be crowded, and inquiry among the exhibitors produced expressions of great satisfaction at the business results obtained.

The trade journals were well represented among the exhibitors occupying prominent places on the stage or elevated floor, which extended across the front end of the room—where were located also the offices of the registration committee, the committee of arrangements, and the officers of the C. B. N. A.; also the display of the New York Technical Drafting School in charge of Instructor Johnson, who was justly proud of the work of his pupils.

Elaborate decorations by exhibitors were not indulged in to any extent except by one or two trade journals, the majority confining their efforts at sign display. So many of these were hung in large design across the room that an extensive view of the whole floor could not be obtained from any one point.

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EXHIBITORS.

Adams, W. F., New York city, cloths, whipcords, bedfords.
Alexander, Samuel, Hartford, Conn., Tuttle rubber tires.
American Dulap Tire Co., Hartford, Conn., pneumatic tires.
Automobile and Cycle Parts Co.
Smith Stamping Factory, Milwaukee, Wis.
Acme White Lead and Color Works, Detroit, Mich.
American Blacksmith, trade paper, Buffalo, N. Y.
American Neck Yoke Co., Byron, Ill.
Bailey, S. R., & Co., Amesbury, Mass., gears, etc.
Baker, Vawter & Co., Chicago, Ill., and Cincinnati, O., binders for belts.
Bradley, C. C., & Son, Syracuse, N. Y., shaft shackles.
Buckeye Mfg. Co., Anderson, Ind., poles, shafts, neck yokes, etc.
Buch & Schen, Cincinnati, O., buggy tops and trimmings.
Boston Artificial Leather Co., Boston, Mass., moroccolene.
Buffalo Spring and Gear Co., Buffalo, N. Y., runabouts in white.
Blacksmith and Wheelwright, New York city, carriage trade paper.
Bradley & Vrooman Co., Chicago, Ill., crown system painting.
Bartram & Rice, Utica, N. Y., Empire mills' cloth.
Boston Roller Chafe Iron Co., Boston, Mass., roller chafe irons.
Bringardner & Conkle, Junction City, O., gear woods.
Calumet Rubber Tire Co., Chicago, Ill., rubber tires.
Canton Pole and Shaft Co., Canton, O., poles and shafts.
Consolidated Rubber Tire Co., New York and Springfield, O., Kelly rubber tires.
Cincinnati Panel Co., Cincinnati, O., bodies, etc.
Corcoran, Thomas H., & Sons, Cincinnati, O., carriage and automobile lamp.
Cleveland Hardware Co., Cleveland, O., rolled steel carriage hardware.
Cleveland Axle Mfg. Co., Cleveland, O., vehicle axles.
Cleveland Rubber Works, Cleveland, O., rubber goods.
Cleveland Bag Factory, Cleveland, O., buckram, burlaps, etc.
Center, Matt Co., Cincinnati, O.
Cortland Specialty Co., Cortland, N. Y., carriage trimming and specialties.
Cleveland Bending works, Cleveland, O., bent woods.
Cleveland Bolt and Mfg. Co., Cleveland, O., carriage bolts and nuts
Crandal, Stone & Co., Binghamton, N. Y., carriage trimmings.
Cleveland-Canton Spring Co., Cleveland, O., vehicle springs.
Cleveland Trimming Co., Cleveland, O., carriage leather.
Cincinnati Buggy Boot Co., Cincinnati, O., buggy boots.
Cooper, J. A., & D. P. Co., Struthers, O., carriage gear woods.
Duffy, Jas. N., Eldred, Pa., patent leather.
Dayton Malleable Iron Co., Dayton, O., malleable castings.
Diamond Rubber Co., Akron, O., rubber tires.
Eberhard Mfg. Co., Cleveland, O., malleable castings.
Excelsior Seat Co., Columbus, O., bodies and seats.
Enterprise Brass Works, Cincinnati, O., carriage mountings.
Empire State Shaft Coupling Co., Utica, N. Y., shafts and couplings.
Empire Rubber Mfg. Co., Trenton, N. J., rubber tires.
Fernald Mfg. Co., North East, Pa., shaft couplings.
Fowler Cycle and Carriage Works, Chicago, Ill.
Firestone Tire and Rubber Co., Akron, O., rubber tires.
Frantz Body Mfg. Co., Akron, O., carriage bodies.
Fowler Elastic Enamel Paint Co., Chicago, Ill., paints.
Fitch Gear Co., Rome, N. Y., vehicle gears.
Fisher Book Typewriter Co., Cleveland, O.
Goodyear Tire and Rubber Co., Akron, O., rubber tires.
Greeno, C. L., Cincinnati, O., carriage goods.
Higgin Mfg. Co., Newport, Ky., carriage trimming and hardware.
Herbrand, C., Fremont, O., forgings.
Hartford Rubber Works Co., Hartford, Conn., rubber tires.
Howell Bros., New York city, cloths.
Hess Spring and Axle Co., Carthage, O., springs and axles.
Hub, The, New York city, carriage trade journal.
India Rubber Co., Akron, O., rubber tires.
Journal Pub. Co., Troy, N. Y., trade journal.
Jones, Phineas, & Co., Newark, N. J., vehicle wheels.
Keratol Co., Newark, N. J., imitation leather.
King Spring Co., The, Buffalo, N. Y., vehicles in white.
Kimback, S. D., Chicago, Ill., carriage goods and bodies in white.
Keagy & Lear Machine Co., Coshocton, O., axles.
Kauffman Power and Hammer Co., Miamisburg, O., fire welding machine.
Keystone Forging Co., Northumberland, Pa., carriage forgings.
Kimble, Andrew, Zanesville, O., gear woods.
Kokomo Rubber Co., Kokomo, Ind., rubber tires.
Keith, B. F., Wilmington, N. C., lubricating oils and axle oiler.
Lounsbery, G. H., & Sons, Cincinnati, O., hair picker, cloth, etc.
Landers Bros., Boston, Mass., oil ducks, buckrams, etc.
Lang, Henry, Co., Newark, N. J., patent leather.
Lee & Porter, Dowagiac and Buchanan, Mich., axles.
Long, Henry, Co., Newark, N. J., patent leather.
Murphy Chair Co., Omaha, Neb.
Morgan & Wright, Chicago, Ill., rubber tires.
Mitchell, The P. H. Co., Cincinnati, O., curled hair.
Meyer, John C., & Co., Boston, Mass., threads.
Miller Bros., Amesbury, Mass., vehicles in white.
Metal Stamping Co., New York city, carriage trimmings and specialties.
Mulholland Spring Co., Dunkirk, N. Y., shaft coupling and springs.
Mechanical Rubber Co., Cleveland, O., rubber tires.
Muncie Wheel and Jobbing Co., Muncie, Ind., wheels and spokes.
Monarch Carriage Goods Co., Cincinnati, O., buggy boots, aprons, etc.
New York Carriage Drafting School, New York city, drawings of pupils.
National Screw and Tack Co., Cleveland, O., tire bolts.
National Roller Chafe Iron Co., West Medway, Mass., roller chafe irons.
National India Rubber Co., Bristol, R. I., and Chicago, Ill., rubber cloths and goods.
Novelty Tufting Machine Co., Chicago, Ill., tufting machines.
Pontiac Leather Specialty Co., Pontiac, Mich.
Peters & Herron Dash Co., Columbus, O., dashes and fenders.
Premier Mfg. Co., Hartford, Conn., pneumatic gears.
Pratt & Letchworth, Buffalo, N. Y., carriage hardware.
Queen City Forging Co., Cincinnati, carriage forgings.
Richmond, Ind., Mfg. Co., Richmond, Ind.
Ruther & Turner, New York city, leather.
Rowland, Wm., & Harvey, Philadelphia, vehicle springs.
Rattan Novelty Co., Indianapolis, Ind., rattan seats, etc.
The Spokesman, Cincinnati, O., trade journal.
Standard Anti-Friction Equipment Co., New York city, pneumatic gears, wire wheels, rubber tires, etc.
Stratton, C. H., & Co., Muncie, Ind., jump seats.
Sidney Pole and Shaft Co., Sidney, O., poles and shafts.
Sheldon Axle Co., Wilkesbarre, Pa., axles.
Schubert, Bros. Gear Co., Oneida, N. Y., work in white.
Sprague Umbrella Co., Norwalk, O., canopy and umbrella tops.
Selle Gear Co., Akron, O., vehicle gears.
Sherwin-Williams Co., Cleveland, O., perfect method painting.
Smith, Hugh, Co., Newark, N. J., patent leather.
Staples & Hanford Co., Newburg, N. Y., wire seat springs.
Schuler, W. S. & Thomas Spring Co., Amsterdam, N. Y., vehicle springs.
Seinsheimer Paper Co., Cincinnati, O., patent paper for vehicle coverings.
Timken Roller Bearing Axle Co., St. Louis, Mo., roller bearing axles.
Tally-Ho, The, Cincinnati, O., C. B. N. A. Bulletin.
Tire Setting Machine Co., Lime Rock, Conn., McGovern cold iron setter.
Topliff, I. N., Mfg. C., Cleveland, O., bow sockets, etc.
Upson Nut Co., Cleveland, O., nuts and bolts.
Varnish, Philadelphia, carriage trade journal.
Victor Rubber Tire Co., Springfield, O., rubber tires.
Ware Bros., Philadelphia, Pa., *Carriage Monthly* and *Carriage Monthly Daily*.
Willey, C. O., Hunters Point, N. Y., paints.
Welding Compound Co., Paterson, N. J., welding compounds.
West Tire Setter Co., Rochester, N. Y., pneumatic cold tire setter.
Wilcox, D., Mfg. Co., Mechanicsburg, Pa., carriage forgings.
Weston-Mott Co., The, Utica, N. Y., wire wheels.
Whitman & Barnes Mfg. Co., Akron, O., rubber tires.
Weston, I. A., Co., Utica, N. Y., wire wheels.

THE TRADE JOURNALS.

Besides The Hub there were *The Carriage Monthly Daily*, which appeared for the twenty-first year, *The Carriage Monthly, The Spokesman, The Dealers' Journal, The Blacksmith and Wheelwright, Varnish* and *The American Blacksmith*. The value of their work was handsomely recognized by the association in the adoption of a resolution of thanks.

HENRY CLAY STAVER.

Henry Clay Staver, the newly elected president of the Carriage Builders' National Association, is one of its most active members, and one who has much to do with associations of vehicle manufacturers. He was born in Loganton, Pa., in 1844, but most of the years of his minority were spent on a farm in Green County, Wis. His first experience on the road was as an agent for an agricultural machinery house. He began business on his own account in 1871 at Monroe, Wis., he continued in this, the retail business, until 1875, and in 1876 established himself as a jobber in agricultural implements at Kansas City, Mo., meeting with success, but having an opportunity to enter the house of J. I. Chase at Racine, Wis., in 1879, he gave up his Kansas City connection and associated himself with that house, as a manufacturer of agricultural implements; but in 1885, he gave up his connection at Racine and engaged in the manufacture of agricultural implements in Chicago, under the firm name of H. C. Staver Manufacturing Company. Five years thereafter he purchased the business of the Abbott Manufacturing Co., which, in 1897, was merged into the Staver Manufacturing Co., and become president of that company.

From his earliest connection with the vehicle industry, Mr. Staver has been prominently identified with it, both as a manufacturer and an active association worker. He is now in the prime of life, a great worker, a good speaker and a man of broad views. His election was made unanimous immediately on the announcement of his having received a majority of the votes of the association, and was greeted with hearty cheers by his associates and he may well feel grateful on being elected to the presidency of such an association as the C. B. N. A., an honor, however, that is mutual.

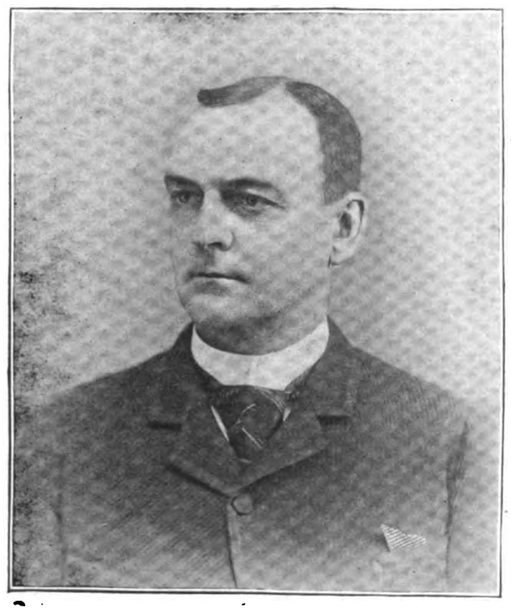
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TWELFTH ANNUAL CONVENTION OF THE NATIONAL RETAIL CARRIAGE AND HARNESS DEALERS' PROTECTIVE ASSOCIATION.

NEW YORK, OCTOBER 15, 16, 17 AND 18, 1901.

THE twelfth annual convention of the Dealers' Association was held at Central Palace, New York, during the first four days of the week beginning October 14. As the greater part of the business was conducted behind closed doors, we are unable to give any account of the proceedings until such time as they are given to the public through the official organ of the association.

The exposition of finished carriages, which was held during the full week of the convention, was a marked success. There was a very large display of carriages, mainly of the lighter order; but a few heavy carriages, such as Broughams, rockaways, drags and depot wagons, were shown. There was also a goodly number of light and heavy business and light delivery wagons, farm wagons, trucks, etc.



V. T. VAN FLEET, PRESIDENT RETAIL DEALERS' PROTECTIVE ASSOCIATION.

Taken as a whole, the quality of the exhibits was better than at any previous exposition. Even the vehicles classed as low grade were improved upon, especially in the painting and trimming, and considering the prices asked for these vehicles there was much to commend. It was, however, in the better grades that the greatest improvements were shown in these styles, and there were evidences on every side of improved taste, close study of proportions and careful attention as to details, all of which, in combination, served to impress upon the minds of visitors the fact of sharp competition in the direction of improvement in artistic as well as in mechanical details.

Among the novelties that appear to have taken hold of a number of manufacturers was the cut-under buggy. Just who was the first to venture in this line in an appreciable extent we cannot say, but the first of this class of buggies that we can call to mind was one illustrated in October, 1900, number of THE HUB. This cut-under serves one good purpose, it makes it possible to turn within a small radius, much smaller than where the deep side is not thus cut away; but where the deep panel is used, with a low hung body and comparatively high wheels, the depth of the cut-under is necessarily great and detracts from the appearance of the body. Years ago deep side bodies were provided with an imitation wheel-house, either square or "bowl," but the depth was not enough to allow the wheel to turn under to the perch. In the case of the cut-under as now used the wheel turns back and rubs against a wear iron on the perch. It was evident that in some cases the turn-under was deepened simply to admit of the passage of the wheels, and so gauged that its top line was above the top of the wheel, which caused the body to look weak, notwithstanding the fact that heavy plates are used on the inside of the frame, around the wheel-house, whereas two or three inches less depth would be equally safe so far as contact with the wheels was concerned, and would have done much to return the body from the appearance of a meal bag, with the center drawn to its smallest capacity. How long this cut-under will hold the boards is hard to tell, but from the orders placed we should judge that dealers look favorably upon this kind of buggy as a seller for next season.

Another noticeable feature was the very general use of deep panel or spindle seats, modeled after the phaeton. These have in a great measure superseded the low panel seats, so long used on square box, Corning, and other bodies of that general class. These seats were in a variety of styles, some deep panels, others spindles bent, straight, and turned; others half paneled and half spindle; and we noticed that designers had followed very closely some of the designs published in THE HUB of April last. The demand for changed patterns of seats has been recognized, and a great variety of styles have been brought out, some rather ornate, but many neat and pleasing as well as comfortable. This change in the character of the seat, together with the changed appearance produced by the pneumatic and other "naked" gears, tended to give a fresh appearance to the buggy line of carriage. The makers of the low grade of work, however, adhere to the plain perch and spring-bar, evidently because of cheapness.

There was a goodly line of surries, without top and with canopy and extension top. There was little that was new in design, but makers of medium grades have followed the styles favored by the high grade builders, and thereby improved the appearance of their product. It is now up to the high grade builders to change their styles if they hope to keep away from the lower class. Will they do so? They must, but it is not likely that they will do so before another year.

The type of vehicle designated as "driving" wagons, those of high seats and deep bodies of novel forms, showed to a good advantage, and some were of attractive designs and well proportioned, so much so that builders of first-class work might obtain hints therefrom. A close inspection revealed in some cases a lack of care in finish and wanting in mechanical care; but the majority were really good carriages, and will, without doubt, find buyers among city customers.

The varieties were numerous, some pleasing, others crude; but as a whole commendable, as the better ideas predominated.

The attendance was large, very large, when we consider that none but dealers and those connected with dealers were to be admitted. How many who were not really connected with the carriage trade either as manufacturers or sellers, were present we cannot say, but so far as we can learn care was taken to give wholesale prices to dealers only and to quote high retail rates to those of doubtful relationship; and although we mingled closely with the exhibitors and dealers we heard no complaints of a positive character, and few hearsays, a fact which speaks well for the honor of all present.

As this exhibit was devised as a sales venture, every manufacturer who placed his goods in the show naturally expected to market a goodly line of vehicles, etc. How far this was realized we cannot determine, as we heard complaints loud and deep and jubilations many. A few expressed themselves satisfied in that they had not lost money by exhibiting, although there was but little balance on the right side of the ledger. We are inclined, however, to believe that while the manufacturers of low grades did a good business in point of numbers, builders of fine vehicles were only moderately successful in the orders booked, and in the promises for the future. But we were assured that a much smaller number would be reshipped to the factory than there were last year.

As to the exhibits themselves there was less crowding than formerly, but we believe that better results would have been obtained by some houses, had they not crowded their space as they did. Where there is so much to see, it pays to make it as easy as possible for customers to get around with little trouble, and to arrange the vehicles in a way to show them to the best advantage. Two of the exhibits were noticeable for the taste shown in fitting up space, and many visitors derived much pleasure from the show presented. The great exhibit made by one house, the Durant-Dort Carriage Co., excelled in the layout anything heretofore attempted in that line. The carriages were set well apart; palms and flags served to decorate the floor and walls. A band of music attracted the lovers of the art, and the sofas, lounges and easy chairs, served as good resting places while listening to the band, while a buffet lunch appealed to those who felt the need of refreshments. It is not likely that many manufacturers will follow the example set by this firm, but the fact that

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they did so much to please all visitors will tend greatly to popularize their products.

Anderson Carriage Co. carried off second honors, and they won many plaudits from visitors of taste. Others there were who exhibited an equal number of vehicles as either of the houses mentioned, but an absence of decorations lost them the advantages they would otherwise have gained.

The exhibits of carriage materials and vehicles in the white were more numerous than heretofore, and comprised representatives from almost every specific branch. There were numerous novelties and a good selection of old and standard goods.

The rubber tire companies were out in full force, and were active in showing goods, while the use of so many rubber tires of one or another kind on the vehicles on exhibition attest the importance of that new industry.

The exhibit of harness was also large, as will be seen by the published list of exhibitors. Taken as a whole there was so much to see that the one week devoted to the exhibition was far too short a time in which to do justice to all that was worthy of careful examination. In fact the magnitude of the exhibit was its weakest feature, and if sales were fewer than was hoped for it was due to the inability of dealers to determine just what they preferred. They were called upon to choose between the products of various houses and to select that which would best suit their own markets. Their preferences might lead them in one direction while their business judgment would influence them in another. This is particularly the case when examining new styles, and because of this we should like to see the exhibition extend over a period of two weeks instead of but one week as at present.

OFFICERS NATIONAL RETAIL CARRIAGE AND HARNESS DEALERS' PROTECTIVE ASSOCIATION.

THE officers elected for the ensuing year are as follows: President, V. F. Van Fleet, of Somerville, N. J.; first vice-president, J. R. Penrose, of Burlington, Iowa; second vice-president, M. H. Tanner, of Winsted, Conn.; secretary, Willian Ranken, of Troy. N. Y., and treasurer, T. Oliver Frobey, of Washington, D. C.

This is President Van Fleet's third election and it speaks well for his individual popularity, as well as his interest in the association. At the meeting on Thursday afternoon there was a lengthy discussion in reference to catalogue houses, and an amendment to the constitution and by-laws of the National Retail Carriage and Harness Dealers' Protective Association was finally adopted, which binds the members not to buy any goods from catalogue houses.

EXHIBITS OF FINISHED CARRIAGES.

Allen G. Edgar, New York, N. Y.
Altick's Son D. A. Lancaster, Pa.
Ames-Dean Carriage Co., Jackson, Mich.
Anderson Carriage Co., Detroit, Mich.
Auburn Wagon Co., Martinsburg, W. Va.
Austin, Tomlinson & Webster Mfg. Co., Jackson, Mich.
Babcock Co., H. H., Watertown, N. Y.
Baily & Co., S. E., Lancaster, Pa.
Bailey & Co., J. R., Amesbury, Mass.
Bailey Carriage Co., F. O. Portland, Me.
Bird & Schofield, Amesbury, Mass.
Birdsall, Waite & Perry Mfg. Co., Whitney's Point, N. Y.
Briggs Carriage Co., Amesbury, Mass.
Britton, R. D. & C. O., Hartford, Conn.
Brockway, W. N. Homer, N. Y.
Buckeye Buggy Co., Columbus, O.
Burbank Carriage Co., Amesbury, Mass.
Champion Wagon Co. Owego, N. Y.
Childs & Co., C. H. Utica, N. Y.
Colfax Mfg. Co., South Bend, Ind.
Columbus Vehicle Co., Columbus, O.
Columbia Wagon, Co., Columbia, Pa.
Coolidge, L. E., Woodville, Mass.
Connor Carriage Co., Amesbury, Mass.
Cortland Wagon Co., Cortland, N. Y.
Cortland Cart and Carriage Co., Sidney, N. Y.
Dennett & Co., C. N., Amesbury, Mass.
Dunlop Vehicle Co., Pontiac, Mich.
Durant-Dort Carriage Co., Flint, Mich.
Excelsior Carriage Co., Watertown, N. Y.
Flint Wagon Works, Flint, Mich.
Folger, N. H., Amesbury, Mass.
Folger & Drummond, Amesbury, Mass.
Fouts & Hunter Carriage Mfg. Co., Terre Haute, Ind.
Frazier & Co., W. S., Aurora, Ill.
Fuller Buggy Co., Jackson, Mich.
Geneva Wagon Co., Geneva, N. Y.
Glens Falls Buckboard Co., Glens Falls, N. Y.
Graves, F. L., Rahway, N. J.
Hanford, W. C., Unadilla, N. Y.
Hassett & Hodge, Amesbury, Mass.
Hollander, L., Amesbury, Mass.
Hoover Wagon Co., York, Pa.
Ionia Wagon Co., Ionia, Mich.
Jackson Sleigh Co., Jackson, Mich.
Jackson Vehicle Co., Jackson, Mich.
Jewel Carriage Co., Carthage, O.
Kauffman Buggy Co., Miamisburg, O.
Keator & Wells, Cortland, N. Y.
Keystone Wagon Works, Reading, Pa.
Keystone Carriage Co., Cincinnati, O.
Kimball Carriage Co.,, Manchester, N. H.
La Porte Carriage Co., La Porte, Ind.
Lancaster & Co., J. A., Merrimac, Mass.
Martin Carriage Works, York, Pa.
Olds Wagon Works, Fort Wayne, Ind.
Owosso Carriage Co., Owosso, Mich.
Parsons Vehicle Co., Columbus, O.
Paterson Co., W. A., Flint, Mich.
Peabody Buggy Co., Fostoria, O.
Pontiac Spring and Wagon Works, Pontiac, Mich.
Safety Buggy Co., Lancaster, Pa.
Schacht Mfg. Co., Cincinnati, O.
Schwarz, C., Philadelphia, Pa.
Scott & Co., R. D., Pontiac, Mich.
Short & Milburn, New York, N. Y.
Stedenfeld, August, Newark, N. J.
Sterling Buggy Co., Rushville, Ind.
Sturtevant-Larrabee Co., Binghamton, N. Y.
Stratton, C. H., Muncie, Ind.
Sullivan Bros., Rochester, N. Y.
Troy Buggy Works Co., Troy, O.
Union Carriage and Gear Co., Watertown, N. Y.
Walker Carriage Co., Amesbury, Mass.
Watertown Carriage Co., Watertown, N. Y.
Wilder & Mallon, New York, N. Y.
Wilkinson, John G., Newburgh, N. Y.
Woodhull, Morris, Dayton, O.
Worthen, C. F., Amesbury, Mass.
York Carriage Co., York, Pa.
Youngstown Carriage and Wagon Co., Youngstown, O.

ACCESSORIES.

Adams, W. F., New York, N. Y., Cloths.
American Steel and Wire Co., Worcester, Mass., Coil Springs.
Armstrong Mfg. Co., J. B., Flint, Mich., Springs.
Automobile and Cycle Parts Co., Cleveland, O.,Forgings, Etc.
Bartram & Rice, Utica, N. Y., Woolens.
Baum's Castorine Co., Syracuse, N. Y., Lubricant.
Bevin Bros. Mfg. Co., East Hampton, Conn., Bells, Etc.
Boston Artificial Leather Co.,, New York, N. Y., Artificial Leather.
Boston Roller Chafe Iron Co., Boston, Mass., Chafe Irons.
Bradley & Son, C. C., Syracuse, N. Y., Shaft Couplings.
Buckeye Mfg. Co., Anderson, Ind., Poles and Shafts.
Buffalo Spring and Gear Co., Buffalo, N. Y., Vechicles in white.
Calman & Co., Emil, New York, N. Y., Varnishes.
Cleveland Hardware Co., Cleveland, O., Sundries.
Climax Zinc Mining Co., New York, N. Y., Zinc Ores.
Coes Gilding Wheel Co., Providence, R. I., Gilding Wheels.
Cooper Co., J. A., & D. P., Struthers, O., Gears and Gear Woods.
Crescent Brake Shoe Co., Philadelphia, Pa., Brake Shoes.
Damon & Peets, New York, N. Y., Pneumatic Gears.
Empire Woolen Co., Clayville, N. Y., Cloths.
Empire State Shaft Coupling Co., Utica, N. Y., Shaft Couplers.
Eastman Metallic Body Co., Cleveland, O., Metal Bodies.
Falkenhainer, Farm Machinery Co., M., St. Louis, Mo., Auxiliary Springs.
Flood & Conklin Co., Newark, N. J., Varnishes.
Fowler Elastic Enamel Paint Co., Chicago. Ill., Paints.
Frantz Body Mfg. Co., Akron, O., Bodies.
Freeland & Son, Wellsville, N.Y., Poles.
Glover Spring Co., Chicago, Ill., Seat Springs.
Grand Rapids Eng. Co., Grand Rapids, Mich., Engraving and Printing.
Gray & Davis, Amesbury, Mass., Lamps.
"Harness," New York, N. Y., Publication.
Hollingshead & Co., R. M., Camden, N. J., Harness Dressing.
Horton, H. A., New Haven, Conn., Goods in white.
Howells Bros., New York, N. Y., Cloths.
Imperial Wheel Co., Jackson, Mich., Wheels.
International Dash and Fender Machine Co., New York, N. Y., Dash Machine.
Jackson Cushion Spring Co., Jackson Mich., Cushion Springs.
Keith Co., B. F., Wilmington, N. C., Patent Axle, Lubricator.
Keratol Co., The, Newark, N. J., Artificial Leather.
Keystone Forging Co., Northumberland, Pa., Forgings.
Lee & Porter, Dowagiac, Mich., Pneumatic Gears.
Louden & Hill, Philadelphia, Pa., Sponges.
McGovern Cold Tire Setter, Lime Rock, Conn., Cold Tire Setting Machine.
McKinnon Dash Co., Buffalo, N. Y., Dashes and Fenders.
Metal Stamping Co., New York, N. Y., Shaft Couplers and Sundries.
Mulholland Spring and Gear Co., Dunkirk, N. Y., Shaft Couplings.
National Roller Chafe Iron Co., West Medway, Mass., Chafe Irons.

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Newark Coach Lamp Co., Newark, N. J., Lamps.
New I. D. Seat Co., Roherstown, Pa., Third Seats.
Newton & Son, W. H., Cortland, N. Y., Bodies, Tops, Etc.
New York Leather and Paint Co., New York, N. Y., Artificial Leather.
Peters & Herron Dash Co., Columbus, O., Dashes.
Pioneer Bending Co., Piqua, O., Bent Woods.
Pontiac Leather Specialty Co., Pontiac, Mich., Leather Specialties.
Potter, Morgan, Fishkill-on-Hudson, N. Y., Patent Brake Shoe.
Premier Mfg. Co., Hartford, Conn., Wire Wheels, Pneumatic Gears, Etc.
Read, O. B., Charlotte, Vt., Rein Supporters.
Roehm & Davidson, Detroit, Mich., Wrenches.
Rose Mfg. Co., Philadelphia, Pa., Lamps.
Rowe, Jas. H., Sing Sing, N. Y., Brake Shoes.
Schadt, John J. & Co., Allentown, Pa., Patent Axle Nut.
Scherer & Co., H., Detroit, Mich., Sundries.
Schubert Bros. Gear Co., Oneida, N. Y., Goods in white.
Selle Gear Co., Akron, O., Gears, Etc.
Sheldon Axle Co., Wilkesbarre, Pa., Axles.
Sherwin-Williams Co., Cleveland, O., Paints.
Shortsville Wheel Co., Shortsville, N. Y., Wheels.
Shuler, W. S. & Thomas Spring Co., Amsterdam, N. Y., Springs and Gears.
Sidney Pole and Shaft Co., Sidney, O., Poles and Shafts.
Spokesman, The Cincinnati. O., Publication.
Sprague Umbrella Co., Norwalk, O., Canopies.
Standard Anti-Friction Equipment Co., New York, N. Y., Pneumatic Gears, Etc.
Standard Ball Axle Works, Lancaster, Pa., Patent Axle.
Standard Roller Bearing Co., Philadelphia, Pa., Roller Bearing Axles.
Standard Varnish Co., New York, N. Y., Varnishes,
Standard Wheel Co. Terre Haute, Ind., Wheels.
Staples & Hanford, Newburgh, N. Y., Cushion Springs.
Straus & Sons, M., Newark, N. J., Leather.
Timken Roller Bearing Axle Co., St. Louis, Mo., Roller Bearing Axles.
"The Hub," New York, N. Y., Publication.
Tire Setting Machine Co., Lime Rock, Conn., Tire Setters.
Troy Bending Co., Troy, O., Poles and Shafts.
Ware Bros., Philadelphia, Pa., Printers and Publishers.
Weston Co., I. A., Syracuse, N. Y., Wire Wheels, Etc.
Weston-Mott Co., Utica, N. Y., Wire Wheels, Etc.
Wilcox Mfg. Co., D., Mechanicsburg, Pa., Forgings.
Wilson Carriage Co., C. R., Detroit, Mich., Bodies.
Witch Hazel Tonic Co., Manchester, N. H., Horse Tonic.
York Wagon Gear Co., York, Pa., Goods in white.
Bath Harness Co., Bath, N. Y., Harness.
Bingham Harness Co., Rome, N. Y., Harness.
Boston Harness Co., Concord Junction, Mass., Harness.
Cargill, Cook & Co., Westfield, Mass., Whips.
Childs & Co., C. H., Utica, N. Y., Harness.
Dana Hardware Co., Boston, Mass., Fur Robes.
Flint Harness Co., Flint, Mich., Harness.
Hill & Co., Jas. R., Concord, N. H., Harness.
Hoover, W. H., New Berlin, O., Harness Accessories.
Lockwood, J. R. & J. H., Burlington ,Vt., Harness.
Morley Bros. Saddlery Co., Chicage, Ill., Harness.
O'Brien, W. D., Troy, N. Y., Harness.
Ranno & Son, H. C., Manchester, N. H., Harness.
Smith, Worthington & Co., New York, N. Y., Harness.
Troy Harness Mfg. Co., Troy, N. Y., Harness.
Wanty, Jos. H., New Brighton, N. Y., Patent Saddle.
Western Robe Co., Detroit, Mich., Robes, Etc.

RUBBER TIRES.

Brooke Airless Pneumatic Tire Co., Denver, Colo.
Calumet Tire Rubber Co., Chicago, Ill.
Columbia Vehicle Tire Co., Boston, Mass.
Consolidated Rubber & Tire Co., New York, N. Y.
Diamond Rubber Co., Akron, O.
Emery Tire Company, Providence, R. I.
Firestone Tire & Rubber Co., Akron, O.
Godyear Rubber Tire & Rubber Co., Akron, O.
Hartford Rubber Co., Hartford, Conn.
India Rubber Co., Akron, O.
International Automobile & Vehicle Tire Co., New York, N. Y.
Kokomo Rubber Co., Kokomo, Ind.
Morgan & Wright, Chicago, Ill.
New Jersey Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., New York, N. Y.
Standard Anti-Friction Equipment Co., New Yor:, N. Y.
Straus Rubber & Tire Co., New York, N. Y.
Victor Rubber Tire Co., Springfield, O.

STEAM BOILERS.

THE Steam Carriage Boiler Co., of Oswego, N. Y., have issued a neatly printed and illustrated catalogue, showing the kind and giving descriptions of steam boilers for automobiles built by them. Parties interested should send for a copy, which will be forwarded to you without cost.

ELEVENTH ANNUAL MEETING OF THE CARRIAGE, HARNESS AND ACCESSORIES TRAVELING MEN'S ASSOCIATION, NEW YORK, OCTOBER 10, 1901.

THE eleventh annual meeting of the C. H. A. T. was held at Central Palace on October 10. The attendance was the largest that has been had in several years, and interest shown in the success of the association was most gratifying. The meeting was called to order at 2:30, and President Walter D. Gregory delivered his address as follows:

ADDRESS BY WALTER D. GREGORY.

Fellow Members of the Carriage, Harness and Accessory Traveling Salesmen's Association of the United States—At the last annual meeting, when I was honored with the presidency of this association, I would say that the very highest compliment was at the same time paid to the trade journals in the industry which is so close to our hearts.

During the past twelve months the affairs of the C. H. A. T. have run along smoothly, and while we have not made the same gains in membership as in a few other years, I feel that our association is stronger to-day than ever before. Since the last meeting death has claimed one of our members—Mr. Forrest W. Forbes. We share in the sorrow with the family and intimate friends.

Our hearts have also been saddened to the extreme by the calamity which has so recently befallen our country. We had all learned to love President McKinley and look to him for the carrying out of grand plans already under way, for the betterment of commercial conditions of both national and international scope. We must, however, rejoice to-day in the fact that we are promised by President Roosevelt that the policy of the Government will remain intact, and that every indication points toward continued prosperity.

The finances of our association are in excellent shape, as will be shown by the treasurer's report.

While most of our members are at present well employed, I feel that the principal aim of our association is something lost sight of by members and manufacturers. I refer to the feature which could well be named, "The Salesmen's Clearing House." Our secretary's system in this department is complete in every detail. All he needs to know is, what members desire positions and what manufacturers need salesmen. Several of our members have been greatly benefited through the workings of this department, and an equal number of manufacturers feel and appreciate that they have also been greatly aided by same in securing just the right men to represent them on the road. It seems to me that when any member learns of a vacancy, he should not fail to make it his immediate duty to inform our secretary, giving such details as he may have at hand. Our members are high class salesmen, and manufacturers want their services just as much as the men want positions. The great trick is to get the right parties in touch with one another. Our secretary can do it.

This leads to the question of associate membership. We need more associate members who will take an interest in our association and who will also take advantage of our "Clearing House" department when in need of salesmen. The entire cost of associate membership is covered by the first payment of five dollars, and it is one of the best investments a manufacturer can make. It is certainly the duty of every active member to see that his firm seriously and favorably considers this important matter. Dealers are also eligible for associate membership, and should be shown the advantage of our association.

Active Membership—The strength of an association such as ours lies almost wholly in the size of its membership. We want more individual work done among the "boys on the road." A few cannot do it all. How many here to-day have made it a point during the past twelve months to show their fellow travelers why they should join our ranks? How many have always had application blanks at hand, and have endeavored to use them once, twice, thrice; yes, a hundred times during the year? I am afraid most of us would have to plead "not guilty," and yet this is the kind of work our association needs and really must have. You ought to be proud of your membership in the C. H. A. T. and I know you are, but I hope that from this moment a greater amount of enthusiasm will exist among our members than has ever been known before. Fellow members, friends, let us now make a vow that each and every one present here to-day will induce at least ten first class salesmen to join our association be-

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fore the next annual meeting. We can do it—then why not? We owe this work to the association—we owe it to ourselves, and you know our members have never learned the definition of the word "fail."

The Banquet—At our last annual meeting it was decided that in 1901 the C. H. A. T. would hold a banquet. Your executive committee has carried out these instructions, and the president has appointed various committees, who have arranged for a banquet, for tomorrow evening, which will be one of the very finest of the season, and which in my opinion will so bring the C. H. A. T. to the notice of the carriage, harness and accessory trades, that our future success will be largely influenced thereby. The banquet will be held at Delmonico's, Fifth avenue and Forty-fourth street, at 7:30 p. m., and it will be an occasion that will be pleasantly remembered for years as one of the many things which the C. H. A. T. has done in the right kind of way. We have induced Mr. J. Seaver Page, one of our members, to act as toastmaster, and a better one does not exist. Speakers of prominence will also be there, and we want you all and your friends there, too. Full particulars will be given in the report of the executive committee.

I wish to take this opportunity of thanking the members of the various committees for their untiring efforts to make this banquet a pronounced success and a great credit to our association.

As we have considerable work to accomplish this afternoon, and as our time is somewhat limited, I will but say that I have fully appreciated the honor of being the chief officer of the C. H. A. T. during the past year, and will conclude by passing to the next order of business.

REPORT OF EXECUTIVE COMMITTEE OF C. H. A. T.

To the Members of the Carriage, Harness and Accessory Traveling Salesmen's Association, Greetings upon this, our Eleventh Annual Convention, and best wishes for a successful year:

Your committee begs leave to submit the following report:

To many of us our annual convention holds peculiar charms; for on this occasion there come together men who are linked in the bonds of good fellowship, with the object of "fostering and encouraging the principles of friendship and brotherly love among men, which a better acquaintance engenders." The history of the C. H. A. T. is but the history of similar associations. The C. B. N. A. in which is enrolled many of our employers, struggled for years against the prejudice of the "Doubting Thomases" who saw no good in "getting together." Time vindicated the wisdom of its founders; time will(if it has not already) justify the wisdom of the founders of our own association who got together at Cooley's Hotel at Springfield, Mass., just ten years ago. A decade has passed, and while our association has not made the rapid strides we have desired, there is, nevertheless, cause for congratulation. We have survived the shafts of skepticism and indifference; we lived and grew through one of the most distressing commercial panics of the century, and we may not be charged with optimism in asserting we are well over the breakers of experiment and are sailing in the safe harbor of *Success*.

A careful inspection of our membership roll shows a large loss through failure to pay the annual dues. It is a serious condition that confronts us. The sum of one dollar annual dues is so nominal, we are of the opinion that the great majority who are lost to us by delinquency is more through forgetfulness than through indifference. Our Constitution and By-Laws is very explicit upon this point. The clause covering same, reads:

NON-PAYMENT OF DUES.

"Any member who shall be two years in arrears and who shall fail to pay his annual dues, after due notification, shall be dropped from membership." Any member who fails to respond to the notices of the secretary for two years, must of necessity be dropped from the rolls.

We enjoin upon each and upon all the importance of promptly remitting the annual dues, which will provide ample funds for the current expenses including funral benefits, without assessment. We also call attention to our pledge:

"All members faithfully pledge themselves to secure as many members as possible, to faithfully promote the spirit and intent of this association, and to foster and encourage the principles of friendship and brotherly love among men, which a better acquaintance with each other always engenders."

This platform is broad enough for all to stand upon, and if we strive to practice these principles, we will not only strengthen our association but broaden our own usefulness.

President Gregory's annual address is full of good advice and we especially emphasize that portion referring to our "Clearing House"—an apt term for our system of securing situations for such of our members who are in need of same. This feature can only be made coöperative by the support of the members, who should promptly report to the secretary the name of any firm which is known to be in need of a salesman. Without this information the secretary is helpless. In this connection we suggest that the secretary be empowered to notify the manufacturers of this beneficial branch of our association and request the trade journals to publish same.

The report of the secretary and treasurer shows a gain of thirty-six members up to date. The finances are in good condition. We



C. C. HAYES, PRESIDENT OF THE TRAVELERS' ASSOCIATION.

have lost one member by death, Brother Forrest W. Forbes, of Westboro. Mass., whose death benefit was paid. We recommend suitable resolutions to his memory.

As the C. B. N. A. takes its new era of prosperity from the years of its first banquet, so we believe the C. H. A. T. will gather a new impetus from our coming banquet. For the past three years, your executive committee has carefully considered the expediency of a banquet and until last year made an adverse report; not deeming the conditions ripe for it. Last year you sustained its judgment that a banquet might be tendered this year with profit and honor.

Your committee has been busy throughout the year to this end, and months ago President Gregory appointed the proper committees to carry it to a successful climax. After diligent inquiry, Delmonico's famous resort was chosen, at the lowest minimum figure per plate, and through the personal efforts of our honored member, Mr. J. Seaver Page, an array of post prandial speakers has been secured that guarantees "a feast of reason and a flow of soul," and the event will no doubt place the C. H. A. T. on a higher plane of fame and usefulness.

Your committee has done its part; its financial success or failure rests with each individual member. We feel confident that each member will give to it his support, and do his part to make the attendance limited only to the capacity of the banquet hall—a total of 420. May we make this gathering one to be long remembered.

Since our last meeting our country has suffered a great national sorrow in the death of its beloved ruler, and today all over this broad land the sable emblems of mourning are a silent tribute to the nation's loss. To the cry: "Watchman, what of the night?" we answer "All is well!" "God reigns and the government at Washington still lives." Lives to teach the misguided followers of anarchy that though its ruler may be removed, it but enhances his fame; but serves to unite the country more firmly in "a government of the people, by the people and for the people." We recommend a suitable record be entered upon our minutes.

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We rejoice that the mighty rush of commerce and manufacture is unchecked by the great tragedy. This has been a year of business prosperity in which we all have shared, and we rejoice that the business horizon is bright with the signs of continued prosperity.

We are living in a wonderful age—an age of improvement and advancement. The nineteenth century which died amid the peals of last New Year's bells was beyond all comparison the most remarkable period in the history of the race, marked by greater material progress than all previous records. It marked the evolution from sail to steam; from the slow coach to the swift horse of iron. It marked the advent of the irrepressible, the always "get there" commercial travelers, who makes possible the Waldorf-Astorias and heavy freight trains. The business pace was never so swift, and though it be "the pace that kills" we must keep step with the march of progress or be a "back number."

In conclusion, when our convention and banquet is over, let us



L. H. KRONFELD, SECRETARY AND TREASURER, C. H. A. T.

re-dedicate ourselves to the cause so nobly represented by our association, and carry with us a determination to labor zealously and faithfully toward the upbuilding of the C. H. A. T.

Respectfully submitted,

W. W. Wood, *Chairman.*
W. A. E. Cummings,
F. H. Gowen,
W. D. Colclough,
W. H. Taylor,
Charles E. Perkins,
L. H. Kronfeld,
Walter D. Gregory, *Prest.*
P. D. Randall, *Sec. & Treas.*

Under the head of new business the president announced that the Watertown Carriage Co., through Mr. W. J. Mills donated to the association one pneumatic runabout to be sold, and the money added to the funds of the C. H. A. T. This announcement was received with cheers, and the company was thanked for its generous contribution.

Announcement was made of the death of Brother Forrest W. Forbes. Appropriate resolutions were recommended.

Also a donation of $25, by L. Hollander, of Amesbury, and a resolution of thanks was tendered Mr. Hollander.

President Gregory then called attention of the association to the banquet to be given in the evening at Delmonicos and promised a pleasant time.

Nominations of officers for the ensuing year were announced as the next business in order, and Fred H. Gowen in a neat speech presented the name of Charles C. Hayes of the Geneva Carriage Co., as president. No other nominations being made the secretary was directed to cast the vote of the association for Charles C. Hayes. President-elect Hayes was conducted to the chair by a committee of three and in a short speech thanked the members for the honor done.

The president next on motion of a member appointed a committee to nominate additional officers. While the committee was out, the following resolution was adopted:

Whereas, Brother Forrest W. Forbes has been called away by death, be it

Resolved, That this association extend to his widow heart-felt sympathy in this, her great bereavement.

Resolved, That a copy of this resolution be forwarded to the family of our late brother and be recorded upon the minutes of this association.

The committee on nominations reported the list of officers, which was adopted and they were declared elected on a vote cast by the secretary.

Resolutions were passed thanking the late secretary and treasurer, Mr. P. D. Randall, for the service so well rendered by him during the many years he occupied the position. Also one thanking the trade journals for their aid so freely given.

The meeting then adjourned *sine die.*

The following is the complete roster of the officers of the C. H. A. T., 1901-1902:

President—C. C. Hayes, Geneva, N. Y.

Secretary and Treasurer—L. H. Kronfeld, Mount Vernon, N. Y.

Vice-Presidents—Chas. E. Sorrin, Chicago, Ill.; H. B. Edwards, Detroit, Mich.; Chas. L. Fullgraff, Bridgeport, Conn.; V. D. Ten Broeck, New York, N. Y.; H. I. Nelson, Portland, Me.; F. W. King, Los Angeles, Cal.; E. M. Brannack, Portland, Oregon.

Executive Committee—W. D. Colglough, W. A. E. Cummings, Fred H. Gowen, W. W. Wood, Walter D. Gregory, P. D. Randall, the president and secretary, ex-officio.

C. C. HAYES.

C. C. Hayes, president of the C. H. A. T. is one of the best known carriage salesmen in the United States. He has covered the country from Maine to Texas and has the happy faculty of making friends wherever he goes. He was born in the city of New Haven, Conn., and went to learn the trade of carriage painting when twelve years old, working at the trade summers and attending schools in the winter. He is now traveling salesman for the Geneva Wagon Co., Geneva, N. Y., with whom he has been associated for twelve years. He is patentee of the Hayes spring, which has become quite popular during the past few years. As he is a worker, we feel assured that the traveling men's association will flourish under his administration. His friends have faith in him and The Hub, being one of these, wishes him success in every venture and congratulates him on the recognition given him by his fellow travelers.

L. H. KRONFELD.

L. H. Kronfeld, the newly elected secretary and treasurer of the C. H. A. T., was born in New York City on April 19th, 1866. His early education was obtained in a private school in that city, after which he entered Grammar School No. 20, graduating therefrom with high honors. He entered the employ of Valentine & Co., varnish manufacturers, in 1879, in the capacity of office boy, and now represents that company in their Eastern territory. Mr. Kronfeld is well known to the carriage manufacturers of Connecticut, Rhode Island and Western Massachusetts. He was president of the C. H. A. T. in 1897 and 1898, and his interest in the association is an assurance that he will make a most efficient secretary and treasurer.

AN INTERESTING EXHIBIT.

Morgan Potter, Fishkill-on-the-Hudson, made one of the most interesting exhibits at the Dealers' Show last month. He exhibited a full line of his celebrated brake shoes. He showed, among others, his regular spring brake shoe; also one having a concave face for use on rubber tires, which seems to be just what the trade is looking for, as it works perfectly and does not injure the rubber in any way. Mr. Potter is an expert in his line, as the numerous inventions shown by him, all of which are his own, testifies. We understand that he made many new customers. You should know all about these brakes, and you can if you will write Mr. Potter for one of his catalogues, which he will send you free on application.

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Automobile Department.

AUTOMOBILE MEET.

BROOKLYN, October 18th, 1901.

Editor of THE HUB:

Dear Sir—George V. Brower, Commissioner of Parks, city of New York, having given his formal approval to the use of the Coney Island Boulevard on Saturday afternoon, November 16th, from 1 o'clock until 5, the L. I. Automobile Club announces the following events, etc.:

First race will be called at 1 o'clock sharp. This race to be preceded by an automobile parade, forming at 11:30 in the neighborhood of the City Hall, Brooklyn, proceeding thence via Prospect Park to a point near Kings Highway, at which place is to be the starting line. All events are for the one mile record. The course is straightaway, the roadway being about 200 feet wide. The side roads of the Boulevard to be left open. Twelve events have been arranged for as follows:

1st: Motor bicycles.
2nd: Motor tricycles
3rd: Gasoline vehicles, 6 h. p. or under.
4th: Gasoline vehicles, over 6 h. p. and including 9 h. p.
5th: Over 9 h. p. including 15 h. p. (gasoline).
6th: Over 15 h. p. and including 20 h. p. (gasoline).
7th: Over 20 h. p. (gasoline).
8th: Steam vehicles (stock).
9th: Steam vehicles (special racing).
10th: Electric vehicles (stock).
11th: Electric vehicles (special racing).
12th: Open championship race, to be run in trials and a final.

The winner in each class given above to be eligible to compete in the final provided the time made for the one mile is 1:30 or better. All events are to be run under the racing rules of the Automobile Club of America. The L. I. Automobile Club is to award cups to the winner in each class and a special cup known as the L. I. Automobile Club cup for the winner of the open championship race.

The sanction and hearty support of Mr. Frank Creamer, the president of the Parkway Driving Club, and Mr. Clark, president of the Pleasure Driving Association, has been given to the club. No more ideal course for a high speed test than this Boulevard can be found in the world. The roadbed is superb and the entire course from start to finish is visible from practically any point along the route. All contests are against time with flying starts. Contestants will be given probably one mile in which to work their vehicles to top speed, one mile for the record, and about one-half mile for slowing down. The owners and operators of the high power vehicles in this country are enthusiastic over the idea. The unfortunate failure of the Buffalo-Erie race has added great interest to the proposed event, and from present indications the club is assured of the most unqualified successes. Because of the short distance vehicles of all classes are enabled to participate and the showing of electric vehicles should be unusual and interesting. Entry blanks have been mailed to all parts of the country. It is expected that Messrs. Bostwick, Keane, Vanderbilt, Charron, Girardo, A. L. Riker, C. G. Ridgeway and many others will embrace the opportunity to demonstrate the speed abilities of their individual vehicles. The opportunity offered to New Yorkers and Brooklynites is unprecedented. There will be given for their benefit and entirely without charge an event which Europeans would travel hundreds of miles to see, and for which they would be willing to pay large sums of money. As the L. I. Automobile Club has always been on record as against high speed on the highways they have taken this means of showing their interest in the sport as well as the development of the industry in endurance tests.

Note—It is hoped, on the part of the club, that you will give this announcement due prominence and that you will find it possible to, from time to time, treat the matter in various ways before the date of the contest arrives.

Yours truly,

A. R. PARDINGTON,
Chairman of Press Committee.

DISCUSSION OF AUTOMOBILE TRADE TOPICS.

NEW YORK, Oct. 19th, 1901.

E. D. KNAPPEN, assistant secretary of the National Association of Automobile Manufacturers, informs us that "the first annual convention of the National Association of Automobile Manufacturers for the discussion of trade topics will be held in the assembly room of the Madison Square Garden during the week of the Automobile Show on the forenoons of Tuesday and Wednesday, November 5th and 6th, 10 to 12 o'clock. Although many prominent manufacturers have brought their vehicles to a practical and satisfactory state of efficiency, yet the industry is so comparatively new that the addresses and discussions cannot fail to be most instructive and helpful. The recent endurance contest from New York to Buffalo has been exhaustively treated by the technical press, but other points of view may prove equally suggestive, as well as more or less humorous. There were doubtless many episodes that have not found their way into print, and some good stories will certainly be told on that topic. The committee in charge of the program and arrangements have mapped out an interesting meeting, which, by the way, will be open to the public. Among the subjects to be discussed are: The National Association, Protective Tariff and Under Valuations, Legislation, Transportation, Commercial Gasoline, Wheels, Steel Tubing, Tires, Races, Good Roads, Prices and Discounts. Men of special ability as speakers and writers on these different subjects have been selected, among whom will be: Samuel T. Davis, Jr., Messrs. Schwarzkopf of *Automobile Topics*, Goodman of *The Motor World*, W. W. Niles, George F. Chamberlin, Edward W. Adams, John Brisben Walker, Charles E. Duryea, E. P. Wells, Albert T. Otto, Kirk Brown, Alexander Winton, T. C. Martin of *The Electrical World and Engineer*, W. P. Stevens of *The Motor Review*, and representatives of the Goodrich, Diamond, Hartford, Standard Oil and Shelby Steel Tube companies.

The annual meeting of the association for the election of executive committeemen will be held in the same place at 8:30 p. m. on Thursday, November 7th, upon the termination of which there will be a dinner, with post prandial oratory. It is hoped to be able to secure one of the bright particular stars for this event, ex-President Eddy of the Chicago Automobile Club, who made such a witty and brilliant speech at the Garden dinner last year.

E. D. KNAPPEN,
Assistant Secretary.

OHIO LEAGUE OF AUTOMOBILE CLUBS.

AT a meeting of delegates from the automobile clubs of Cincinnati, Dayton, Cleveland and Columbus, held at the Neil House in Columbus on Wednesday, October 23, the Ohio Automobile Association, or League of Ohio Clubs, was organized. The meeting was called in parlor F soon after the noon luncheon, and the session continued until nearly four o'clock in the afternoon, when the work was completed. E. L. Strong, president of the Cleveland Automobile Club, was made chairman, and Rutherford H. Cox, secretary of the Automobile Club of Cincinnati, was made secretary. After some discussion as to the purposes of such a club, the chairman, on motion of one of the delegates, appointed a committee on constitution and by-laws, as follows: R. A. Holden, Cincinnati; Howard S. Rodgers, Cincinnati, and George L. Weiss, Cleveland. Mr. Cox had already prepared a rough draft of the paper, and after about one hour, the committee was able to report to the meeting. The articles were taken up one at a time and discussed, after which they were voted upon. All were adopted with some minor changes.

The only important changes suggested were that the association should admit only gentlemen to membership and that proxy voting on officers should be allowed. In regard to the first point, it was decided to allow the article regarding membership to stand, thus allowing the admission of lady members upon the same footing as gentlemen. The by-laws were changed so as to allow proxy voting.

Immediately after the adoption of the constitution and by-laws officers for the year were elected as follows: President, E. L. Strong, Cleveland; vice-president, Dr. A. L. Bowman, Dayton; secretary and treasurer, Rutherford H. Cox, Cincinnati; executive board, E. L. Strong, Dr. A. L. Bowman, Rutherford H. Cox, Carl Bauman, Howard S. Rodgers, H. M. Neil and George L. Weiss. The committees provided for in the constitution and by-laws will be appointed by the president later on.

One of the principal things that will receive the attention of the association will be an effort to secure uniform laws throughout the

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United States, so that tourists going from one State to another will not have to be posted on various laws of the States that he visits. Another object will be to secure better roads in Ohio. The League of American Wheelmen accomplished a great deal in this line, and the association will endeavor to continue this work. Good men will therefore be appointed upon the committees that look after these things and a delegate will attend meetings of the proposed national organization which is in process of organization.

The delegates present from the four clubs were as follows:

Automobile Club of Cincinnati—Reuben A. Holden, president; Howard S. Rodgers, captain; Rutherford H. Cox, secretary.

Dayton Automobile Club—Earl Kiser, Dr. A. L. Bowman, Carl Baumann, Fank Hilt, Dr. Ensey and Mr. Appel.

Cleveland Automobile Club—E. L. Strong, president; George F. Weiss and R. W. Slusser.

Columbus Automobile Club—Oscar S. Lear, president; C. M. Chittenden, E. C. Morton and Dr. E. F. Wilson.

The constitution and by-laws are as follows:

CONSTITUTION.

Article 1.—Name—This association shall be known as the Ohio Automobile Association.

Article 2.—Objects—The promotion of an organization composed of persons owning or using self-propelled vehicles for personal or private use; co-operation in securing proper, just and rational legislation and formation of proper rules and regulations governing the use of automobiles in city and country, and maintaining the rights and privileges of owners or users of self-propelled vehicles whenever and wherever such rights and privileges are menaced; the encouragement and development in this State of the automobile; the promotion and encouragement in all ways of the construction and maintenance of good roads and the improvement of existing highways, and generally to maintain an association devoted to automobilism.

Article 3.—Membership—The membership shall be composed of persons who are owners or users of automobiles in the State of Ohio.

Article 4.—Government (Section 1)—The officers of the association shall consist of a president, vice-president and a secretary, who shall also serve as treasurer.

Section 2.—The general management and control of the affairs, funds and property of the association shall be vested in an executive board, consisting of the president, vice-president, secretary and four other members.

Article 5.—Amendments—(Section 1)—The constitution may be amended only by a vote of two-thirds of all the members present in person and by proxy at a regular or special meeting called for that purpose.

Section 2.—No proposition to amend the constitution shall be acted upon at any meeting of the association unless it shall have been presented in writing to the secretary, signed by at least five members, and notice embodying the purport of the proposed amendment shall have been sent to each member of the association in the call for such meeting, which notice shall be sent at least one month prior to the date of the proposed meeting.

BY-LAWS.

1.—Annual meetings shall be held in October of each year at the time and place designated by the executive board.

2.—At the annual meeting of the association the members present shall constitute a quorum. At all other meetings ten members shall constitute a quorum.

3.—The officers and executive board shall be elected at the annual meeting and be chosen by ballot, in person or proxy, each member in good standing being entitled to one vote.

4.—The officers shall hold office until the next succeeding annual election, or until their successors are appointed.

5.—The executive board shall have power to fill all vacancies, the term of service of such appointment to expire at the next annual election.

6.—The executive board shall have full charge of the management of the association and direction of the committees during the interim between annual meetings.

7.—The president shall appoint the following standing committees, to serve for one year:

Committee on law and legislation (three members).
Good roads (five members).
Membership (three members).

8.—The duties of the officers shall be such as ordinarily pertain to their respective offices.

9.—There shall be an initiation fee of one dollar each, and annual dues of one dollar each.

10.—The by-laws may be amended only by a vote of two-thirds of all the members present, in person or proxy, at a regular or special meeting called for that purpose.

AMERICAN BICYCLE COMPANY.

(See illustrations in "Latest Styles.")

THE Automobile Department of the American Bicycle Company entered four vehicles in the first annual race meet of the Detroit Automobile Racing Association, held at the Grosse Pointe track, Detroit, October 10th, 1901. The three races in which entries were made were five miles for steam carriages, one mile open to all vehicles weighing less than 1,500 pounds, and the obstacle race. In the five mile event the Toledo carriage secured second place, while the two vehicles entered in the one mile open divided first and second honors between them. In the obstacle race the Toledo carriage scored 100 per cent., making the total Toledo winnings for the day one first and three seconds, which was the best showing made by any manufacturer.

The day previous to the race, five standard Toledo carriages, which were to take part in the automobile parade in the morning, and two of which were later in the day to participate in the race, left Toledo at half-past ten, arriving in Detroit at 1.15, making the run of 63 miles in 2¾ hours. The roads part of the way were in fairly good condition, while those encountered from Trenton on were in pretty poor shape.

The five Toledos after arrival were washed down, and with very little attention beyond application of oil to the working parts, lined up for the parade in exactly the same condition as they left Toledo. At the close of the racing for the day, two of the carriages started on the return journey to Toledo, the othe three remaining until the morning following. All five reached Toledo in perfect condition.

The Toledo carriage, which the Automobile Department of the American Bicycle Co. started on Monday, October 14th, from their Toledo, Ohio, factory, en route to New York overland, is meeting with an unusually successful tour. The telegrams which have come to the company every night, tell a story that backs up their manufacturing department's claims of sound construction.

This company are also builders of the Waverly electric motor vehicle at their main works at Indianapolis, Ind., and are now making arrangements with carriage dealers to handle both the Waverly electric and the Toledo steam vehicles. They are ready to offer good inducements to reliable carriage houses to handle their goods, preferring this course to opening plants or putting their products in the hands of houses not familiar with the carriage trade. This opportunity is an excellent one, and dealers whose patrons are likely to be interested in motor carriages should correspond with the American Bicycle Co. at Indianapolis, Ind., and get terms and prices.

BUFFALO ELECTRIC CARRIAGE CO.

(See Illustration in "Latest Styles.")

THIS shows the very attractive exhibit of the Buffalo Electric Carriage Co., of Buffalo, N. Y. In the foreground are shown the two types of the "Buffalo Stanhope," the only difference being in the style of the bodies. It is an electric carriage, built by "carriage builders," on carriage lines of construction entirely, but strengthened at all points to meet requirements of electric propulsion. It has strong wooden wheels, solid rubber tires, hickory reaches, re-inforced by a steel band running the entire length; Colinge style of axles, ball bearings throughout, but no tubing is used in its construction. It has a full Victoria top of the finest hand buffed leather, and trimmed with a very fine heavy broadcloth or leather. The seats are 41 inches wide, roomy enough for three persons. The carriage will be painted and trimmed in any color to suit purchaser.

The other vehicle shown is known as the "Buffalo Special." It is shown without top, although it is built either way. This carriage is a radical departure in its lines from the others. Instead of the regular dash in front, it has a sort of an extension box wherein is carried part of the battery, distributing by this means the weight evenly over the four wheels and at the same time taking away the regular carriage effect in front, giving it rather a "French" appearance. There

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is also on exhibition one Stanhope "in the white," which does not show in the picture, but which allows the observer to see all parts just as they come from the wood shop and blacksmith shop. The carriages are so simply operated and perfectly controlled that a child fifteen years old can learn to run them in ten minutes. They are all equipped with the famous Porter battery, and are guaranteed to make thirty-five miles at highest rate of speed over average city streets (fifteen miles an hour) on one charge. On a recent trip sixty-one miles were covered on one charge, forty-eight of which were over a hilly country road, the remaining thirteen in the city. The company also makes a six passenger "brake," and a runabout, both of which are very stylish vehicles. The exhibit, which is in the Machinery and Transportation Building, is in charge of Mr. C. E. Pratt and Mr. George D. Adams, who will gladly explain all parts of the carriages to visitors. As the factory is only three minutes ride from the grounds, those interested in inspecting the methods of construction may have the privilege of calling at the works, at the corner of Militart Road and New York City Belt Line.

CANADA MOTORS CO. BREAK.

(See "Latest Styles.")

One of the most attractive and roomy automobiles that has been turned out is a large twenty passenger break built by the Canada Motors Co., Toronto, Canada. This vehicle is electric propelled and, being handsomely painted, and when loaded, as shown in the illustration, it is at once attractive, as well as commodious.

A ONE HUNDRED YEAR CONTRAST.

(See "Latest Styles.")

The Century Motor Carriage Co., of Syracuse, N. Y., have secured a photograph illustrating a contrast of the present with the past. This shows a Century motor vehicle in the lead and following after it a one horse chaise, built in the year 1800, before it an antiquated horse in a harness that might have dated back to the first days of the chaise. The photo was taken at St. Johnsburg, Va., and is extremely interesting because of its reality.

THE CONRAD MOTOR CARRIAGE CO.

(For Illustration see "Latest Styles.")

In our notice in September Hub of the automobile exhibit at the Pan-American Exposition we called attention to the vehicles shown by the Conrad Motor Carriage Co., of Buffalo, N. Y. Our illustration in "Latest Styles" shows the collective exhibit which attracted marked attention.

CRESTMOBILE.

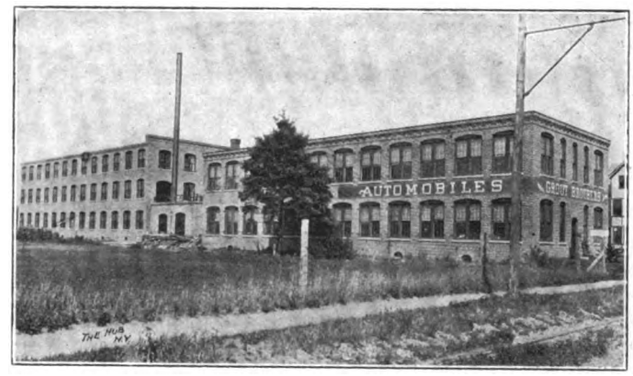
(See Illustration in "Latest Styles.")

Since the introduction of the crestmobile by the Crest Mfg. Co. of Cambridge, Mass., some radical changes have been made improving the carriage greatly. The prominent changes are the adoption of side steering, instead of center steering, which is now recognized by all automobilists as giving the more perfect control of the vehicle than the previous method. The steering is done by the left hand, which is the usual custom. The right hand controls the speed, making all the changes from the fastest to the slowest. This makes the most simple and natural method regulating the speed of the carriage. They have also adopted a light, easy spring making the carriage as easy as a horse drawn vehicle of the latest type. Not the slightest vibration in the carriage is felt from the motor, nor neither is the shock noticed in going over rough roads. The fact that they do not carry any of the weight of the motor or machinery in the carriage allows them to use the lightest springs that are used for pleasure carriages. All tubings, wheels and axles have been increased in size and strength, being the same as now used on all steam carriages. The total weight of supplies and machinery is less than one hundred pounds, reducing the weight over three hundred pounds, practically making the carriage twice as strong for the weight of machinery carried. As they have adopted the standard motor tire, which is used now on the heavier carriages, the life of the tire should be very great, as the weight on the tires is very low. Some of the new valuable features is a removable tank that can be taken from the carriage to be filled, and also removed in case it is desired to store the crestmobile in places where objections might be made against the gasoline on account of insurance. This will be a special advantage for touring. In the former carriage a three-quarter seat was used. They are now using full seat, extra width, making the carriage on this account exceedingly comfortable. One of the unique features is the starting device, so that the motor can be started from the carriage. This is of special advantage, as will be recognized by all automobilists, as the motor can be stopped when passing by restive horses and when in conversation with a friend, and then can be quickly and easily started. This method is more expensive than the simple crank to construct, but it has the advantage, as it removes all the disagreeable and dangerous features of starting the motor by the crank method. One important feature that the crestmobile possesses is that it is an all year round carriage. The fact that no water is carried at all makes it well adapted for use in cold weather, as there is no danger of freezing. At any time if desired by the customer, he can get any speed he desires, within reasonable limits, as it is only the question of changing the size of sprocket on the motor shaft. In towns and cities where it is hilly, the carriage is usually speeded from twelve to fifteen miles an hour, but where the roads are good and only slight grades, the carriage is speeded from fifteen to twenty-five miles an hour. Another thing, the tank has been enlarged to a capacity of one hundred miles. This is quite important for touring. These improvements make this carriage well adapted for the roughest use, and it can be handled by a lady or minor with but very little instruction.

GROUT BROTHERS' PLANT.

(See also "Latest Styles.")

The illustration herewith shows the new plant of Grout Bros., manufacturers of motor carriages at Orange, Mass. This plant has recently enlarged and the company is now prepared to fill orders



GROUT BROS. AUTOMOBILE PLANT.

promptly. The company made a fine exhibit at the Pan-American Exposition, a photo reproduction of which appears on "Latest Styles."

THE PEERLESS MANUFACTURING CO. CAR.

(See illustrations in "Latest Styles.")

The Peerless Motor Car has a long wheel base, low center of gravity, with motor in front. The frame is built of channel iron after the style of locomotive carrying out the idea that the motor car is a road locomotive rather than a horseless carriage. Both front and rear wheels are pitched inward, after the manner so long in use with all vehicles not run on prepared tracks. The pitch of the wheels is made possible by flexible axle which also obviates all loss of power by excessive friction when strains of the road tend to throw the rear wheels out of alignment.

Motors are of vertical type of the company's own make, with crank disks, enclosed in tight aluminum cases, running in oil bath which automatically lubricates the cylinder and all bearings. Owing to the vertical position of the cylinder all sides are equally lubricated

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with the piston rings wiping uniformly the entire circumference, and thus preventing excessive amount of oil in the firing chamber, which obviates the prolific cause of obnoxious odors. The arrangement of the firing chamber and spark plug make the plug self cleaning.

A system of mufflers is used which produce very little back pressure and yet almost eliminates the noise of the exhaust. Ignition is by the jump spark system by means of mechanically operated vibrator of unique and entirely original design, which requires no adjustment in months. Circulation is by means of centrifugal pump operated by friction disk against the fly-wheel. Cooling is by the most effective system of radiating coils at the front of the car, and requires only two or three gallons of water. The improved carburettor, together with the high efficiency of the electrical ignition system and arrangement of mufflers, entirely eliminates the visible exhaust and obnoxious odors. The carburettor is of an improved design requiring absolutely no adjustment to the varying speeds of the motor. The starting is accomplished by a half turn of the crank which is placed at the front of the car. The drive is by means of beveled gear attached to the compensating gear, which is part of the rear axle, and is perfectly protected from dirt, mud or water. The speed gear is connected with the driving gear by a flexible shaft. The gears are enclosed in aluminum case running in oil bath, which automatically lubricates all bearings. The speed gear is self-contained and is connected with the motor by universal coupling which protects the bearings, gears and clutch from any strain due to any quality of the road. The speed is controlled by means of a single lever at the right, giving three speed forward and reverse with advancement and retard of spark to regulate the speed of the motor. Change of speed is quiet, clutches go in without clatter or vibration, and gears operate without noise.

A powerful band brake on each rear wheel is operated by a lever at the right and held by a ratchet until released. A foot brake operates on a drum between the motor and the compensating gear. The direction of the front wheels cannot be changed by contact with obstacles, and no shock can be transferred to the steering wheel. By means of a knuckle joint and sleeve the top part of the steering column is bent, throwing the steering wheel away from the chauffeur when mounting or dismounting. The sleeve operates by a spring holding the column rigidly without back lash or sway. This makes it possible to place the wheel well into the chauffeur's lap, yet entirely out of the way when mounting. This is particularly necessary when divided seat is used. The electric current, both primary and secondary, is conducted through a special heavily insulated cable, proof against circuiting in wet weatrer.

All parts are oiled by means of sight feed oil cups and pressure pump, placed in front of the chauffeur's seat, within reach of the hand. It should be unnecessary to dismount for the purpose of oiling oftener than once in two hundred miles. Tires are of the Mechilin Clincher pattern, of American manufacture, 30x3 inches, or 30x 3½ inches. Wire or wood wheels are used as ordered. All two passengers cars have rear platform, which may be used for luggage, rumble seat or two passenger tonneau. The chauffeur's seat is either double or divided into individual seats. The upholstery is regularly plain, but will be quilted if so ordered. All cars are equipped with two kerosense lights and a very powerful acetylene head light, or with two side lights and two acetylene head lights having a combined power about equal to the single head light which is offered as an option. The mud guards of aluminum with front guards flared out, protecting both occupants and the car from mud when the wheels are at an angle. Weight of car with tanks filled, luggage and equipment ready for touring without tonneau, is 1,250 pounds. With tonneau, 1,350 pounds. Eight horse power. Motor speed, 32 miles per hour.

BOILER SHELLS.

Janney, Steinmetz & Company, of Philadelphia, have been for several years largely identified with improvements in the construction of automobile boiler shells and seamless cold drawn steel high pressure reservoirs for containing air and gasoline under pressure.

The products of this firm are drawn up seamless without welding from the best quality of open hearth marine flanged steel, and their boiler shells with walls 3/16 in. thick, which have been adopted as standard by nearly all of the large steam wagon builders and boiler makers in this country and abroad, will readily withstand an hydraulic pressure of considerably over 1,000 pounds.

They make boiler shells in diameters of 10 in., 12 in., 14 in., 15 in., 16 in., 17 in., 18 in., 19 in. and 20 in., and in lengths to accommodate any construction up to 18 in. tube lengths.

In tanks they make all sizes from 6 up to 16 in. in diameter and in lengths up to 5 feet. The most popular size of tank that they are now producing for automobile air and gasoline pressure measures 8 or 9 in. in diameter and in lengths from 20 to 28 in.

These people have very large equipments and will be pleased to figure out any special shape needed by automobile builders.

PRIZE CUP.

The illustration herewith represents the cup won by the A. B. Company's Toledo Steam Carriage in the one mile open event at the first annual meeting of the Detroit Automobile Racing Association, held October 10th, 1901, at the Grosse Pointe Track, Detroit, Mich. The event for which this cup was first prize was confined to automobiles under 1,500 pounds, and the two vehicles which finished first and



second were both Toledo steam carriages. The time of the winning carriage for the mile was 1:51 3-5, which time is very creditable for one mile standing start. At this meet, it will be recalled that Toledo carriages scored the highest honors receiving one first and three seconds.

STEAMOBILE.

(For Illustration see "Latest Styles.")

The Steamobile Co. of America, located at Keene, N. H., are meeting with success in placing their goods, and are as yet unable to get a surplus stock, a condition that speaks well for the machine.

CHARLES W. SPURR, JR., RESIGNS.

At a meeting of the members of the Long Island Automobile Club, held on Wednesday evening, October 9th, the resignation of Charles W. Spurr, Jr., as secretary of the club, was acted upon and accepted. Owing to Mr. Spurr's absence from town a greater part of the time on business, he did not feel capable of attending to the many duties incidental to the office. Mr. L. A. Hopkins was elected secretary to fill his place. At the same meeting Dr. Nathaniel Robinson was elected member of the Board of Governors, to fill vacancy caused by the resignation of Mr. Freeman. The plans for the proposed race meet, to be held under the auspices of the club and under the racing rules of the A. C. A., were practically settled upon. The events are to be held on the Coney Island Boulevard, November 16th, from 1 to 5 p. m. to establish mile records on a straightaway course. The course selected by the club for this event probably has no equal in this country and members are looking forward with much interest to seeing all world's records for the mile in various events broken.

WALTHAM MANUFACTURING CO.

In our notice of this company in September Hub the type made us say the price of the company's motor carriages was $350, when it should have said $850. The company is located at Waltham, Mass., where they will be pleased to receive communications, but buyers of $350 motor carriages need not apply.

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LEATHER CLOTHING.

DEMMERLE & Co. are still increasing their line. They decided to make leather clothing and Mr. Mendelsohn began to look up the consumers for suggestions. They now have a complete line, and when we say complete, we mean it. Three styles of coats, a clean sharp coat, kid on one side and corduroy on the other, this coat can be worn either side out; a sack coat, kid surface and well lined, and last of all, the nobby Norfolk jacket in beautiful kid, the handsomest thing that has ever been attempted in leather. Leather vests, and leather trousers, with doubled sewn seats and tight buttoning at the ankle. A beautiful leather legging, with only one seam and that in the back for the man who prefers cloth trousers to leather, or who is going to use his automobile for other things than touring. All this in addition



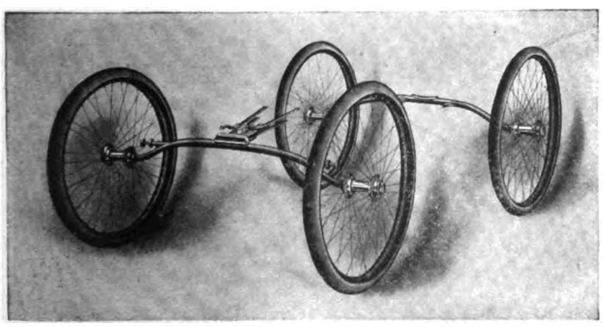
LEATHER CLOTHING.

to their already complete line of caps and gauntlets certainly gives them a line of automobile clothing that has never been surpassed.

For winter use the very latest thing is a dull finish kid cap, with an extra flap which pulls down over the ears and laps the edge of the coat collar. The strap which passes under the chin is made to unbuckle, instead of slide, and when buckled under the chin holds the pull-down in place and close to the ears. For comfort this is the greatest feature that has been added to automobile clothing so far, and the name of Demmerle & Co., 248 West Twenty-third street, is sufficient guarantee of the style and workmanship, as they undoubtedly make 90 per cent. of the high grade automobile caps on the market.

AUTOMOBILE PARTS.

THE Neustadt-Perry Co. of St. Louis, Mo., are devoting special attention to the manufacture and sale of automobile parts, keeping away totally from the complete vehicles, as they believe that by so doing they can best serve vehicle builders. They are wholesale manufacturers of supplies, and warrant all parts manufactured by them to be of good material and workmanship, and they make the most liberal



AUTOMOBILE PARTS.

allowances when repairs are made necessary through any inherent fault in the manufacture of their materials. They have issued a very complete catalogue which should be in the hands of every manufacturer and repairer of automobiles. Send for a copy.

AUTOMOBILE CLUB OF UTICA.

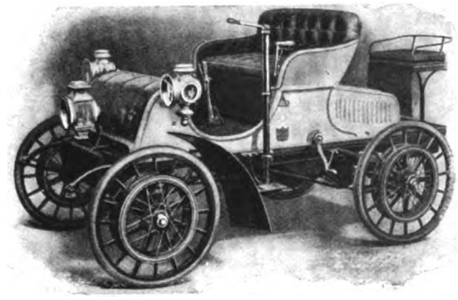
THE Automobile Club of Utica, N. Y., has been regularly formed, and a constitution and by-laws adopted. Twenty-six members have been enrolled, and permanent club rooms have been engaged in the Huron building. The president is Mr. C. S. Mott, of The Weston Mott Co.; vice-president, Mr. A. J. Seaton; treasurer, Mr. Sam'l Campbell; secretary, Mr. James S. Holmes, Jr., general manager of the Remington Automobile and Motor Company.

STEARNS STEAM CARRIAGE COMPANY.

THIS company made an elaborate display of its automobiles at the Boston Show, October 15th to 25th; will also make one at the Madison Square Garden Show in New York city, November 2nd to 9th. Their success at the Pan-American Exposition at Buffalo warrants them in giving the public every opportunity to see their vehicles.

WHEEL WITHIN WHEEL.

ONE of the most unique vehicle wheels that has been brought before the vehicular world is the "wheel within wheel," in form of construction a most radical departure from the wheels now and heretofore in use. This is a metal wheel, having an inner and an outer rim, over and under the pneumatic tube. The outer one compressing the tubing, and receiving in full all the shocks imparted by the impact of the outer channel rim or wheel tread with the ground. All parts are so thoroughly constructed, and act so relatively to each other as to impart the acme of strength to the wheel without impairing its resiliency, but serving to intensify that quality. Constructive novelty, and the perfect mechanical combination of parts, and completeness of action by which the concussion imparted in rough riding is taken up before reaching the hub, combined with other valuable features, warrant a most careful examination of the principles involved in this novel wheel. One wheel was exhibited



AUTOMOBILE, EQUIPPED WITH WHEEL WITHIN WHEEL.

at the Automobile Exposition last year, and by many of those who examined it, (outside of practical mechanicians) it was looked upon more as a curiosity than as a practical, mechanical production, largely due, however, and without doubt, to its radical difference from all other wheels. The inventor, however, holding the opposite view, has, during the past year, made improvements wherever such was demonstrated a necessity, and the manufacturers now claim to be able to construct wheels of great strength and durability, and those that will add largely to the life of the vehicle proper, and essentially to the comfort of those riding therein. The wheels are manufactured by The Wheel Within Wheel Company, Park Row Building, New York. Their exhibit will be in booths 81 and 82 at the Madison Square Garden Automobile Show during the first week in November, where interested parties can demonstrate for themselves its riding qualities on an up-to-date automobile which will be exhibited and in use at that time.

A MOTOR COMPANY.

A CERTIFICATE of incorporation of the Graham-Fox Motor Co. has been filed with the Secretary of State at Albany, N. Y. The corporation is formed to manufacture and sell automobiles and everything which appertains to them. The company is capitalized at $500,000, and the directors are Frank A. Fox and David F. Graham, of Stamford, Conn.; James J. Thornley, of Brooklyn; Carl G. Weaver, of New York City; Walter D. Blake, of Richmond Hill, L. I.

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PAN-AMERICAN AWARDS.

THE following list embraces all whose work is in any way directly related to the carriage and wagon building industry:

MACHINERY.

GOLD MEDALS.

American Tool Works, Cincinnati, O., Radial Drill.
Buffalo Forge Co., Buffalo, Steam Engines.
Buffalo Forge Co., Buffalo, Blowers and Fans.
Cincinnati Machine Tool Co., Cincinnati, O., Upright Drill.
Cleveland Twist Drill Co., Cleveland, O., Twist Drills, Reamers and Cutters.
Hay-Budden Manufacturing Co., Brooklyn, N. Y., Anvils.
Long & Alstatter Co., Hamilton, O., Power Punching and Shearing Machines.
Morris Machine Works, Baldwinsville, N. Y., Centrifugal Pumping Machine.
Morse Twist Drill and Machine Co., New Bedford, Mass., Machine Tools.
The Niles Tool Works Co., Hamilton, O., Boring and Turning Machines.
Pratt & Whitney, Hartford, Conn., Reamers, Cutters and Measuring Tools.
H. B. Smith Machine Co., Smithville, N. J., General Woodworking Machinery.

SILVER MEDALS.

Buffalo Forge Co., Buffalo, Punches, Shears and Forges; Induced Draught, Blacksmith's Drills.

TRANSPORTATION.

GOLD MEDALS.

Automobile Co. of America, New York city, Gasmobile.
Crane & Breed Manufacturing Co., Cincinnati, O., Hearses.
De Dion-Bouton Motorette Co., Brooklyn, N. Y., Motorettes, Bicycles and Quadricycles.
Electric Vehicle Co., New York city, Electric Automobiles.
Electric Vehicle Co., New York city, Electric Vehicles (variety and completeness).
Locomobile Co. of America, New York city, Locomobiles.
Mobile Co. of America, Tarrytown, N. Y., Mobiles.
Pennsylvania Rubber Co., Erie, Pa., Rubber Tires and Mechanical Rubber Goods.
Studebaker Bros. Manufacturing Co., South Bend, Ind., Freight and Delivery Vehicles.
Studebaker Bros. Manufacturing Co., South Bend, Ind., Vehicles for Farm Use.
Studebaker Bros. Manufacturing Co., South Bend, Ind., Army Wagons.
Studebaker Bros. Manufacturing Co., South Bend, Ind., Road Sprinkling Wagons.

SILVER MEDALS.

S. R. Bailey & Co., Amesbury, Mass., Pleasure Vehicles.
Buffalo Spring and Gear Co., Buffalo, Pleasure Vehicles (in the white).
Baker Motor Vehicle Co., Cleveland, O., Electric Runabout.
Diamond Rubber Co., Buffalo, Rubber Tires and Mechanical Rubber Goods.
Goodyear Tire and Rubber Co., Akron, O., Rubber Tires.
Revere Rubber Co., Boston, Rubber Vehicle Tires and Air Cushion Horseshoe Pad.
Veeder Manufacturing Co., Hartford, Conn., Cyclometers, Odometers and Fine Castings.
Woods Motor Vehicle Co., Chicago, Automobiles.

BRONZE MEDALS.

Cowles & Co., New Haven, Conn., Carriage Hardware and Mountings.
Emery Tire Co., Providence, R. I., Punctureproof Bicycle Tires.
Electric Vehicle Co., New York city, Gasoline Automobile.
Elkhart Carriage and Harness Manufacturing Co., Elkhart, Ind., Pleasure Vehicles; Harness.
Fiske Rubber Co., Chicopee Falls, Mass., Bicycle, Vehicle and Automobile Tires.
Henry Hooker & Co., New Haven, Conn., Pleasure Vehicles.
Kidder Motor Vehicle Co., New Haven, Conn., Motor Vehicles.
Studebaker Bros. Manufacturing Co., South Bend, Ind., Pleasure Vehicles.
Studebaker Bros. Manufacturing Co., South Bend, Ind., Harness.
E. R. Thomas Motor Co., Buffalo, Motor Bicycles and Vehicles.

HONORABLE MENTION.

Buffalo Electric Carriage Co., Buffalo, Electric Carriages.
Morris Electric Co., Cleveland, O., Metallic Automobile Bodies.
Selle Gear Co., Akron, O., Spring Wagon and Gear.
Stearns Steam Carriage Co., Syracuse, N. Y., Steam Carriages.
George Werner, Buffalo, Pleasure Vehicles.
M. Van Wagoner, Syracuse, N. Y., Vehicles for City Delivery, Trucking, Freighting and Moving Heavy Substances (dump wagons).

MANUFACTURES.

GOLD MEDALS.

American Steel and Wire Co., New York and Chicago, Wire Nails and Miscellaneous Springs.
Berry Bros., Ltd., Detroit, Varnishes.
Pantasote Leather Co., New York city, "Pantasote."

LIBERAL ARTS.

SILVER MEDAL.

Technical School for Carriage Draftsmen, New York city, Drawings, Designs, Students' Technical Work.

HONORABLE MENTION.

Ware Bros., Philadelphia, *The Carriage Monthly.*

CARRIAGE MANUFACTURER'S STATEMENT.

THE carriagemakers' strike calls for the careful consideration of all conservative men, capitalists, manufacturers and mechanics. Is Cincinnati in danger of losing her vehicle business, in addition to her stove and furniture industries?

The broad, extended labor trouble of this year must have challenged the attention of all thoughtful men, and the question of how long labor organizations, irresponsible and without regard to vested interests, shall be permitted to upset all business conditions, must be soon settled. The strike in the metals trade has marked a new era in the conflicts between labor and capital, and the fair, thoughtful and dignified "Declaration of Principles" issued by the metals trades, established a basis on which manufacturers and employers can work harmoniously. Realizing that a condition existed in which, while responsible for the conduct of their business, the control was passing from their hands, the carriage manufacturers of Cincinnati followed the lead of the metals trades, and while most explicitly setting forth in the Declaration of Principles, which follows that they demanded nothing of their men on the score of membership or non-membership in a union, they would treat with their men individually and not collectively.

The following principles shall govern us in our relations with our employees:

1. As employers, we are responsible for the work turned out by our workmen, and we must therefore have full discretion to designate the men we consider competent to perform the work, and determine the conditions under which that work shall be prosecuted. The question of competency shall be determined solely by us and we will not admit of any interference with the management of our business.

2. Employment—There shall be no discrimination against sex, creed or membership to any society by any employee and every workman who elects to work in our factory shall be required to work peaceably and harmoniously with all fellow employees.

3. Wages.—We shall be free to employ our work people at wages mutually satisfactory between man and man, and we will not permit any employee to place any restrictions on the management, methods or production of our factory.

We will require from each and every employee a fair day's work for a fair day's pay. We shall decide ourselves whether wages shall be paid by premium system, piece work or contract.

4. Apprentices, Helpers, Laborers, etc.—The number of apprentices, helpers, laborers, etc., employed in our factory will be solely determined by us, and it is the privilege of any employee to leave our employ whenever he sees fit, and we have the same privilege to discharge any employee when we see fit.

5. Relationship Between Ourselves and Employees.—It is our wish to treat harmoniously and satisfactorily with each and every employee in our place. We do not countenance any action on the part of any employee that will restrict the amount of work done by a fellow employee or that will prevent his earning as much money as his best efforts in our factory will permit, nor is it our desire or intention to act arbitrarily on the wage score. Our aims and intentions are to at all times pay the best wages that conditions of the business and general competition permit.

The future of our business depends upon apprentices and new help just the same as our quantity or output depends upon new fields and new customers, and we propose to support our business, which means the support of our employees, in full keeping with the demands of each season.

Cincinnati, August 3, 1901.

This declaration of principles was distributed to the employees in the carriage factories of Cincinnati on the 3d of August, and within a short time, viz., on the 14th, in two of the factories, the Brown Carriage Company and American Carriage Company, a strike was declared, the men, at the dictation of the unions, refusing to work under the conditions set forth in this circular, and several of the other carriage factories, realizing that the condition which existed in one, was vrtually the condition which existed in all, decided to await the issue and to re-employ their men only on a basis which should be mutually and individually satisfactory.

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The number of men interested in this strike is from twenty-five hundred to three thousand, which does not take into consideration that, because of the strike, as many more men are out of work, who are employed in the accessory trades, located at Cincinnati, whose business of supplying the carriage men with their material, is shut off.

All of the carriage factories have opened their works and are ready to take back their men when they are willing to return and work harmoniously in the factories with those whom they may find there.

If the carriage industry cannot be conducted in Cincinnati, on these lines, the industry will disappear, and be scattered elsewhere, following the stove business and the furniture business, which have both been driven away from Cincinnati. Outside towns offer liberal inducements to manufacturing enterprises, and four of the factories are even at the present time considering their removal, and will certainly not remain here under adverse conditions.

The loss to the manufacturers and to the workmen, because of this strike, is larger than many would suppose, and the storekeepers and tradesmen of Cincinnati must realize what it would mean to them if either this strike is to be continued or the industry crippled, for at least two hundred thousand dollars has already been lost in wages, and capitalists and manufacturers must realize that a million and a half dollars of business has been lost to the city. This condition affects seriously the prosperity of Cincinnati in its largest manufacturng interests, and challenges the consideration of our civic bodies. Unless our courts, magistrates and police will protect the manufacturers in the enjoyment of their rights and public sentiment add its force, the days of this industry in Cincinnati are numbered.

THE ANCHOR BUGGY CO.
THE AMERICAN CARRIAGE CO.
THE BROWN CARRIAGE CO.
THE CONTINENTAL CARRIAGE CO.
FRANK J. ENGER.
HICKORY CARRIAGE CO.
HIGHLAND BUGGY CO.
JAMES MEYER CARRIAGE CO.
LION BUGGY CO.
RATTERMAN & LUTH.
SAYERS & SCOVILL.
SECHLER & CO.

BEDFORD AND WHIP CORDS.

BARTAM & RICE, of Utica, N. Y., showed an attractive line of Bedford and whip cords at the dealers' show. Many of these were interwoven with silk in sufficient quantity to give a slight lustre to the surface. This finish is what is desired by many builders, and their goods received special attention. The cords are manufactured by the Empire Mills, N. J., the Jackson Carpet Co., being the Philadelphia agents.

J. B. ARMSTRONG MANUFACTURING CO.

THE J. B. Armstrong Manufacturing Co., of Flint, Miss., manufacturers of carriage and other vehicle springs, showed a line of their goods at the Dealers' Exposition. This company are the American manufacturers of the Armstrong single leaf spring, of which they produce about 2,500 a week, the total output of the plant being about 4,500 sets. They employ about 225 workmen. The company was incorporated in 1896, with R. T. Armstrong as president. Two of the most popular salesmen on the road represent this house. Hhese are Walter T. Taylor and G. L. Taylor, both of whom are recognized as active, energetic men, who are always given a hearty welcome by the carriage trade.

"THE AMERICAN" SHAFT COUPLING.

AT both the New York and Cincinnati conventions the exhibit of the Empire State Shaft Coupling Co., of Utica, N. Y., excited a large amount of attention from visitors. This was especially due to the novelty and practicability of their new automatic coupling which they have styled "the American." It was simplicity itself and works like a charm. In their advertisement in this issue appear two cuts of "the American," and we would recommend that our readers study same very carefully and that they should write to the manufacturer for full particulars and complete details.

Items of Interest.

JAMES SMITH, JR.

IN our notes on the patent leather industry of Newark, N. J., in our October issue, we mentioned the house of Halsey & Smith, but owing to the photograph of Mr. Smith not reaching us in time for that month we publish it herewith. James Smith, Jr., the surviving member of the firm, was born June 12, 1851. He became interested



HON. JAMES SMITH, JR.,
Of Halsey & Smith, Patent Leather Manufacturers, Newark, N. J.

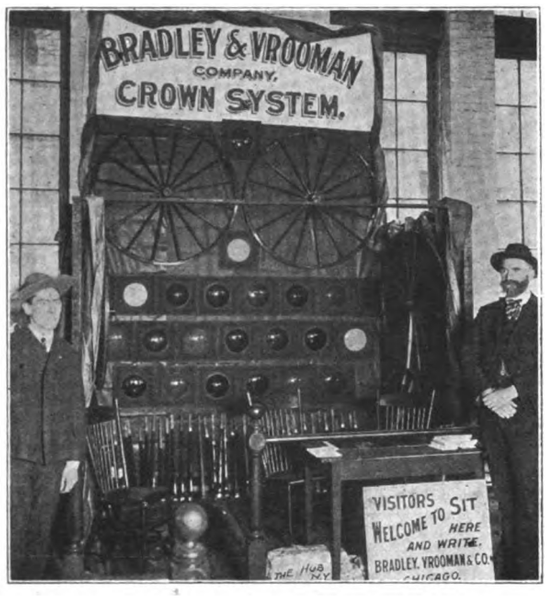
in the leather business in 1869, and in the firm of Halsey & Smith in 1879. Mr. Smith has long been active in political life. He was elected United States Senator from New Jersey, and assumed the duties of the office in March, 1893. The details regarding the business of his house were published in the October HUB.

THE CROWN QUICK PROCESS SYSTEM OF PAINTING VEHICLES.

WHILE during the past fifty years, almost all branches of industry have been improved by the introduction of scientific principles, it must be confessed that the modern systems of carriage and buggy painting have rather retrograded than advanced, especially as far as permanency is concerned. It is utterly impossible, however, for manufacturers who produce thousands and tens of thousands of vehicles in a season, to give time enough to properly paint them in the old-fashioned manner, which took from six to eight weeks to complete a single job. The consequence is, that many have been forced to adopt some quick system of painting, with results that, as a rule, the paint on the vehicle crumbled, obliging the owner to have it repainted inside of a year from the time of its purchase. Realizing that it was utterly impossible for the manufacturers of vehicles to allow sufficient time to do their painting in the way it was done in days past, the proprietors of the "Crown" commenced to study the problem of supplying the carriage and buggy makers with a system that would not only possess the necessary element of quickness, but would, in durability, equal lead and oil. Constant experimenting over a period of several years finally resulted in success, the production of the Crown Quick Process System of painting carriages and buggies. In it they have combined speed, simplicity, beauty, durability and economy. Each coat dries over night; three coats produce a good commercial job; four coats a most superior finish. The ingredients of the Crown System have been chosen with that most important feature, viz., durability, uppermost in mind. By a special process, known to them alone, these ingredients are made to dry over night, without

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in the least destroying the qualities of elasticity and permanency. It is claimed that the Crown Quick Process System not only equals the lead and oil method in durability, but actually surpasses it, as

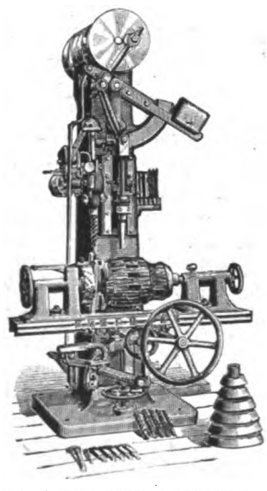


some of the most prominent and largest carriage and buggy builders are willing to testify to this fact.

If you manufacture carriages or buggies, and do not use it, write to the Bradley & Vrooman Co., Chicago, for further particulars.

NO. 5 HUB MORTISER AND BORING MACHINE.

THIS illustration presents to the reader Fay & Egan's new No. 5 hub mortiser and borer. It will mortise from the smallest buggy hub to a 16-inch diameter wagon hub. The patent reverse can be used automatically, or can be controlled by the operator at will. The chuck for holding the hub is furnished with five index plates to mortise the necessary number of spokes to the hub, either straight or staggered; one end of the hub is held by two jaws, operated by a right and left hand screw, while the other end of the hub rests in a cup of suitable size. The radial slide, covered by letters patent, is operated by treadle, and prevents any jar on the foot, even when



NO. 5 HUB BORING MACHINE.

mortising, without first boring hole to admit chisel—a thing never before accomplished on a machine of this class. The boring mandrel is connected with a column and driven by pulley at the top of same, making the machine entirely self contained. A counterweight is provided for lifting the boring mandrel up out of the way when not in use. The manufacturers of this improved machine, J. A. Fay & Egan Co., of No. 421 to 441 West Front street, Cincinnati, Ohio, will be pleased to furnish full particulars and prices to those interested on application, and will send their illustrated poster showing same free.

CHANGE OF LOCATION.

THE Shelby Steel Tube Co., advise us that on and after November 1st, 1901, the sales offices of their company will be consolidated and transferred to the Empire Building, Pittsburg, Pa., and hereafter all orders or communications be addressed to the Pittsburg office, as they will discontinue their New York and Chicago sales offices on October 31st. The company's facilities being steadily augmented, they will be well equipped to care promptly and satisfactorily for your requirements in their line. Their seamless tubes are steadily gaining in favor and demonstrating their excellence and superiority.

THE FOWLER SYSTEM.

THE Fowler Elastic Enamel Paint Co., of Chicago, Ill., are now putting on the market a system of painting and paints which they have tested in all manner of ways and are now thoroughly convinced as to its value. The paints and the system used make it possible to finish a vehicle in about one-half the time ordinarily required and produces a beautiful finish. They have three qualities of work, the best one contains a Fowler elastic primer, an elastic filler and two coats of Fowler elastic color, with a coat of any of the good brands of finishing varnish. The second quality contains one coat of each of their primer, filler and color, with finishing varnish and the lowest grade contains one each of their primer and color, with finishing varnish. The company are demonstrating in many of the larger factories and have taken many good orders. They will have a large exhibit at the vehicle show in Music Hall, Cincinnati, beginning November 18th, and will demonstrate the material and method in their booth. Frank T. Fowler, Mr. H. C. Ashbaugh and Mr. F. Krumdick will be in attendance at the exhibit.

ENLARGING THEIR PLANT.

THE Pennsylvania Rubber, Co., of Erie, Pa., received the gold medal on solid and pneumatic tires and mechanical rubber goods at the Pan-American Exposition. They are now building large additions to their factory and putting some of the largest machines ever built for working rubber in the new buildings and in the future intend to cope with the rapidly increasing demand for their goods.

CANOPY AND UMBRELLA TOPS.

COL. SPRAGUE, of Norwalk, O., will be at the November Automobile Show in New York with the finest line of canopies ever displayed. His canopies are especially adapted for automobiles and are made for one or two seat vehicles. He is paying particular attention to the automobile trade; he will give his personal attention to their exhibit at this show. The elegance of any vehicle is noticed particularly in its trimmings. The Colonel uses only the best materials in the market. His designs are original and attractive. The Sprague patent canopy top fastening is both simple and secure, allowing the canopy to be removed with the greatest ease. To appreciate the merits of these canopies they must be seen and the display at this show will afford you the opportunity. The souvenirs to be given away are in the shape of a small canopy or parasol to take home to the little ones. Call and get one.

NOYES CARRIAGE CO.

THE Noyes Carriage Co., of Elkhart, Ind., has recently been reorganized and the capital stock increased from $25,000 to $50,000. Mr. L. C. Lull, of the Lull & Skinner Co., of Kalamazoo, will continue as president of the organization; Mr. P. E. Eberenz, until recently general superintendent of the plant of the Owosso Carriage Co., Owosso, Mich., secretary and superintendent, and S. D. Platt, who was secretary and treasurer of the Owosso Carriage Co., treasurer and general manager. With this organization the company will change the output of the factory to a popular-priced line of vehicles, and will aim to increase the output largely. They are located in one of the best cities of its size in the country, in fact right in the territory with the best of them, and will not be handicapped by being a little off the line as was the case at Owosso. The business will be continued under the style of "Noyes Carriage Co.," this deal being simply a re-organization of the old company.

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LEWIS PROUDFOOT.

We present herewith the portrait of one of the best known gentlemen connected with the carriage trade of New York, Lewis Proudfoot, or as he is familiarly termed, "Lew" Proudfoot; a smaller circle of close friends just "Proudie." He is the senior member of the firm of L. Proudfoot & Son, heraldic and monogramic artists, with a studio at 1695 Broadway.

Mr. Proudfoot stands in the front rank of his somewhat unique profession. Indeed, he stands almost alone for, he has for the past



LEWIS PROUDFOOT.

quarter of a century done four-fifths of the heraldic and monogramic work of the entire carriage trade of New York city and its vicinity. Mr. Proudfoot was born in Lewiston, N. Y., April 3, 1847, so that in spite of his long years of service and the added responsibility of having recently become a grandfather, he is still a young man. Mr. Proudfoot volunteered at the first call to arms in '61, but owing to his years was accepted only as a drummer boy at first, but he saw three years of hard service in the field. He was a member of the Ninth Regiment in Jim Fisk's palmy days. He is intensely patriotic and an American always. His first connection with the carriage business was in the shop of I. B. Brewster & Co. of Twenty-fifth street, New York, where he learned the trade of carriage painting. His artistic tastes, however, soon led him into the more congenial field that he has ever since made so much his own. Although one of the busiest of men he is never too busy to do a kindly or generous act. He can always spare a minute, too, to tell a good story, of which he seems to have an inexhaustible supply, and no one enjoys the telling of a good story more than he. He has had many curious experiences in the course of his heraldic career, some of which have already been told in the columns of a New York paper and the listener is sure of a treat if he can catch him in an idle hour and reminiscent mood. Mr. Proudfoot's home at Ardsley-on-the-Hudson reflects the artistic tastes of its owner and lies very close to his heart. All his spare time is spent there, and there are many who will testify that the latch string is always out.

A FINE EXHIBIT.

The Watertown Carriage Co., of Watertown, showed twenty jobs at the dealers' exhibition in New York. These consisted of elliptic spring top and no top buggies, runabouts, pneumatic and high wheel, corning and side spring buggies, also a buggy on "Triumph gear," Concord, phaeton surreys, extension and canopy top. The whole line was attractive in style, neat in finish and evidenced care in workmanship, few exhibits were so universally good.

BUFFALO SPRING AND GEAR CO.

The Buffalo Spring and Gear Co., manufacturers of vehicles in the white, at Buffalo, N. Y., have just completed their new catalogue, which is a model in its line. They show a line of buggies, pneumatic and plain gears, the vehicles being trimmed and ready for painting. In addition they show gears of various kinds. Each fully and clearly described. The catalogue is designated as "O," 1901 and 1902. It is a valuable and attractive catalogue and is one that will be preserved.

COACH AND CARRIAGE LAMPS.

The Thos. H. Corcoran Sons, of Cincinnati, manufacturers of lamps, are one of the most progressive firms in the carriage accessory trades. They are ever originating new designs and always have styles which the trade demands. Their exhibit at the C. B. N. A. at Cincinnati contained designs for every style of pleasure vehicle. Their capacity is large and always fill orders promptly.

MORGAN & WRIGHT.

Morgan & Wright of Chicago, manufacturers of the Morgan & Wright rubber tires and other rubber goods, circulated a very neat and attractive booklet at the Dealers' Show last month. The pages are printed in brown ink and embellished with cuts of their tires and artistic designs, some of which are reduced reproductions from Hub prints. If you did not get a copy send for one.

THE EXCELSIOR CARRIAGE CO.

The Excelsior Carriage Co., of Watertown, N. Y., made a small exhibit at the New York exposition, but small as it was, it commanded attention. They showed a Bailon gig and one sleigh of pleasing pattern and fine workmanship.



W. D. GASH, OF THE LARCHMONT MOTOR CO., PHILADELPHIA, PA.

THE LOWE BROS. CO.

At the Cincinnati convention we were pleased to find Mr. John W. Welsh in charge of the carriage color department of the Lowe Bros. Co., of Dayton, O. They had an exhibition of their rub-primer and colors. This primer has many advantages for use in the paint department, and it has been thoroughly tested by the manufacturers before they placed it on the market.

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RESIGNED.

HARRY J. MCCULLOUGH, formerly manager of the Highland Buggy Co., Carthage, O., resigned his position on October 10, after having occupied the place for fifteen years.

RETURNED FROM EUROPE.

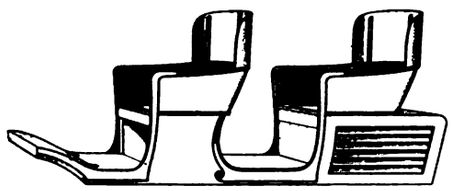
HARVEY A. HIGGINS, general manager of the Standard Tool Co., manufacturers of twist drills, reamers, etc., Cleveland and New York, has returned from a five-months' trip, throughout Europe, in the interests of his company, and states it has resulted in very successful business.

CARRIAGE BODIES AND SEATS.

H. COOK & Co., of Cincinnati, O., are manufacturers of all kinds of carriage bodies, including surreys, buggies, also stick seats, etc. They have been enlarging their factory by a new addition which is 55 by 40 feet and three stories high, and now prepared to fill all orders promptly.

SCHUBERT BROS.' GEAR CO.

SCHUBERT Bros.' Gear Co., of Oneida, N. Y., manufacturers of gears and bodies, are giving special attention to the manufacture of



AUTOMOBILE BODY.

bodies for automobiles. Give them a call if in want of bodies of any kind.

PAN-AMERICAN AWARDS.

THE awards of medals by the committee of the Buffalo Pan-American Exposition to American manufacturers of automobiles is as follows:

Gold Medals—Automobile Company of America, gasmobile; De-Dion-Bouton Motorette Company, motorettes, bicycles and quads; Locomobile Company of America, locomobiles; Mobile Company of America, mobiles, and the Electric Vehicle Company, two medals.

Silver Medals—Baker Automobile Company, Haynes-Apperson Automobile Company, Overman Automobile Company and Woods Electric Vehicle Company.

Bronze Medals—Kidder Vehicle Company and E. R. Thomas Motor Company.

Honorable Mention—Buffalo Electric Carriage Company, Eastman Automobile Company and Stearns Automobile Company, electric.

HORSE SHOW ENTRIES.

CLASSES OF FOUR-IN-HANDS, OF DEALERS AND OF CARRIAGES WILL BE LARGER.

WITH almost four score more entries, the Horse Show at Madison Square Garden during the week of November 18th will have even keener competition than last year to delight the lovers of royal animals. Entries closed on Saturday, with a total of 1,434, as compared with 1,363 for 1900.

Though some classes will be smaller, there is a noticeable increase in horses in harness, dealers' horses, carriage horses, horses and appointments, saddle horses and trotters in harness. Notable is the increase in four-in-hands, in which there are fifty-two entries, as compared with thirty-seven.

Dealers' classes are almost double. The novice classes have filled better. A pleasing fact also is that about fifty new exhibitors will be represented, principally owners of private carriages. For the Waldorf-Astoria prize for high steppers the entry is almost twice as large as last year.

EXPIRED PATENTS.

THE following list of patents, trade-marks and designs of interest to our patrons are furnished by Davis & Davis, solicitors of American and foreign patents, Washington, D. C., and St. Paul Building, New York City. A copy of any of these may be had for 10 cents by sending to the above firm.

PATENTS EXPIRED SEPT. 2, 1901.

304,292—Spring Wagon—D. Buckler and D. Nicholas Pelzer, Ionia, Mich.
304,397—Running Gear for Vehicles—T. J. Allison, Bingham School, N. C.
304,430—Vehicle Brake—A. E. Hermann, Ravenna, Ohio.

PATENTS EXPIRED SEPT. 9, 1901.

304,839—Fifth Wheel for Vehicles—J. McEntee, Covington, Ky.
304,933—End Gate for Wagons—C. Hotz, Chicago, Ill.
305,005—Jump Seat—G. H. Hutton, Baltimore, Md.

PATENTS EXPIRED SEPT. 16, 1901.

305,077—Fifth Wheel—James Milton Herndon, Judsonia, Ark.
305,095—Thill-Coupling, T. A. Mayes, Phillipsburg, Pa.
305,187—Two-Wheeled Vehicle—E. P. Hincks and G. M. Johnson, Bridgeport, Conn.
305,193—Sice Spring Vehicle—Z. M. Howell, Salida, Cal.
305,241—Vehicle Spring—C. W. Saladee, Torrington, Conn.
305,342—Thill-Coupling—W. S. Shanahan, East Chatham, N. Y.

PATENTS EXPIRED SEPT. 23, 1901.

305,468—Running Gear for Wagons—H. S. Nelson, Clear Lake, Iowa.
305,486—Storm Protector for Vehicles—F. P. Stone, Chicago, Ill.
305,507—Buggy Body—M. Y. Buck, Crawfordsville, Ind., assignor of three-fourths to D. A. Roach, W. E. Roach and B. F. Gillispie, all of same place.
305,539—Thill-Coupling—G. E. Smith, Newark, N. J.

PATENTS EXPIRED SEPT. 30, 1901.

305,734—Two-Wheeled Vehicle—H. J. Bruhn, Cleveland, Ohio.
305,745—Whiffletree and Neck Yoke Ferrule—P. S. Crawford, Rockford, Ill.
305,769—Wheel—S. T. Williams, Red Bank, assignor to Williams Tension Wheel Co., Newark, N. J.
305,794—Axle Skein—S. G. Cole, Carson, Minn., assignor of one-half to I. Leahman, same place.
305,815—Pole Attachments for Wagons—A. T. Hawk and J. W. Scott, Preston, Ohio.
305,850—Vehicle Spring—C. Y. Saladee, Welcottville, Conn.
305,871—Dumping Car—W. J. West, Jackson, Mich.
305,978—Spoke Socket—F. W. Starr, Springfield, O., assignor of one-half to T. Wall, same place.

RECENT PATENTS RELATING TO THE CARRIAGE TRADE

668,949—Vehicle Brake—Charles R. Bolter, Logan, Iowa.
668,768—Vehicle Starter, Brake and Power-Storing Device—Walter A. Bradley, assignor of one-half to H. Koons, Buffalo, N. Y.
668,769—Automobile—Joseph Break, Spokane, Wash.
668,985—Wagon—Thompson V. Edwards, assignor to F. H. Cotes, Peoria, Ill.
668,639—Motor Road-Vehicle—Charles E. Hadley, Hartford, Conn., assignor to Columbia and Electric Vehicle Company, Hartford, Conn., and Jersey City, N. J.
668,644—Wheelwright Machine—Washington J. Hutson, Flat Woods, Tenn.
668,685—Vehicle Spring—Paul Lier, assignor of one-half to L. Kruse, Emerson, Neb.
668,994—Tire for Vehicles—John B. Mahana and A. A. Pompe, Toledo, Wash.
668,687—Thill Coupling—Louis G. Mayer, Cincinnati, Ohio.
668,693—Vehicle Nut Wrench—George E. Spurr, Portland, Me.
668,788—Vehicle Step—Henry C. Wilson, assignor of one-helf to J. T. Key and F. M. Reeves, Mona, Ark.
34,138—Design, Hanger for Wagon Wheels—Lars A. Erickson, West Pullman, Ill.
669,475—Locking Device for Vehicle Brakes—James H. Bullard, Springfield, assignor to Overman Automobile Company, Chicopee, Mass.
669,135—Brake for Two-Wheeled Vehicles—Ivory C. Colcord, Des Moines, Iowa.
669,238—Thill Coupling—Fred L. Hawkins, Gardner, Mass.
669,089—Movable Vehicle Seat—John C. Lambert, Tonica, Ill.
669,396—Tire—Orville L. Leach, Providence, R. I.
669,262—Wagon-Brake—John W. McIntosh, Knobnoster, Mo., assignor of two-thirds to N. T. Cook and W. J. Hutson, Flatwoods, Tenn.
669,344—Wagon-Brake—Edward L. Moore, assignor of one-half to W. B. Ogden, and S. H. Carlile-Kent, Sundance, Wyo.
669,096—Vehicle Shaft—George E. Nauman, Canton, Ohio.
669,430—Thill Coupling—Frederick Reese, Eutaw, Ala.
669,125—Vehicle Wheel—Robert A. Schwenke, Berlin, Germany, assignor to Siemens & Halske Electric Company, Chicago, Ill.

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Obituary.

J. Cuesta Graham.

J. Cuesta Graham, a highly esteemed and honored member of The Hub's representatives, died on October 31st at a hospital in Philadelphia, Pa., where he had gone for treatment for a long stand-



J. C. GRAHAM.

Born May 27, 1865; died October 31, 1901.

ing trouble, which necessitated a surgical operation. Inflammation followed and this, together with other complications, proved fatal. Mr. Graham was born at Dandaff, Pa., May 27th, 1865. He received a liberal education and had the advantages of a refined home, to which he was devotedly attached. His connection with The Hub began in October, 1897, and he continued a most loyal representative from that time until his death. His territory included the New England States and the Atlantic Coast States to the south, and everywhere in his journeying he made friends by his cheerful manners, earnest work and conscientious efforts to faithfully perform the duties imposed and many will be those who will regret that he should have ended his earthly career just as he was approaching the meridian of his life. He was a devoted son, and the comfort of his widowed mother, with whom he lived at the family home in Glen Ridge, N. J., and who seemed to be uppermost in his thoughts and governed his actions. To write of him is to write of a man in whom paternal love, affection for brothers and sisters, an earnest desire to perform every duty in life, and to deal honestly with his fellow man, were his guiding mentors, which he followed with all the earnestness of his nature. In his death all in the offices of The Hub mourn the loss of an honest associate and an esteemed friend, and all join in the sorrow that so weighs upon his cherished mother and loved brothers and sisters. In Mr. Graham's father's recent death we are reminded of Longfellow's words:

"Death never takes one alone, but two,
Whenever he enters in at a door.
Under roof of gold or roof of thatch,
He always leaves it upon the latch,
And comes again ere the vear is o'er—
Never one of a household only."

Henry Hauck.

Henry Hauck, of the carriage factory firm of Hauck & Brinckman, of Jersey City, died suddenly of heart disease at his residence in Wayne street, near Summit avenue, Jersey City Heights, October 7th. He was forty-five years old. He appeared well when called for breakfast, but immediately after getting up he became ill and died in a few minutes.

William W. Wilson.

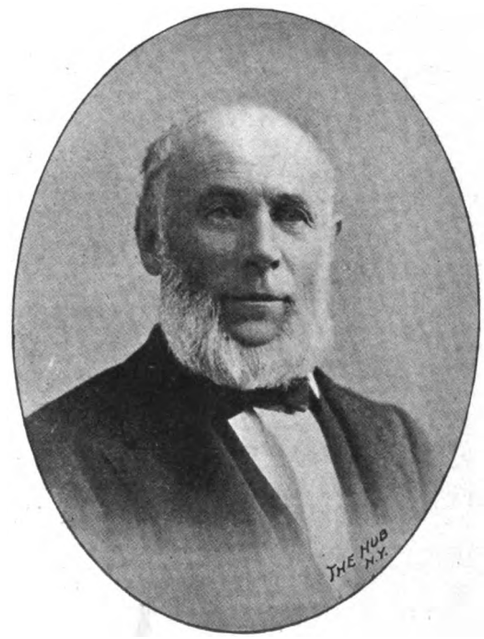
William W. Wilson died at Farmland, Ind., October 3, 1901. He had been in the carriage business for thirty-five years, and was one of the largest dealers in Eastern Indiana.

Col. James N. Duffy.

Col. James N. Duffy died suddenly at Newport, Ky., October 18th. Col. Duffy was the founder of the J. N. Duffy Leather Company of Eldrid. Lately has has resided in Newark, N. J. He was a gentleman well known in the patent leather trade, and was the father of Dr. C. J. Duffy, of Newport. He was a veteran of the civil war. Though Col. Duffy had been sick for the past two years, his death comes as a shock to his many friends. He was among the early manufacturers of patent leather, and was well known by the users of patent leather throughout the country.

Major Lewis Downing, Jr.

Major Lewis Downing, Jr., of the firm of Abbott & Downing, Concord, N. H., coach and carriage builders, died on August 19, in the eighty-first year of his age. At the time of his death he was the oldest man actively in the carriage industry in the United States. Major Downing was connected with the firm of Abbott-Downing as an employee or member for over sixty years. He was born in Concord, December 6, 1820, and attended school in his native town and at the Burr Seminary in Manchester, Vt. For a short time thereafter he was employed in a store in Concord, and he then entered the establishment of Downing & Abbot to learn the coach-maker's trade. With that firm he has been for sixty years, and for many years has been president of the Abbot-Downing Co., the corporate successors of the firm. Major Downing has almost equally long been prominently identified with the most important financial interests of the city of Concord. Since 1867 he has been a director in the National State Capital bank, and since 1878 he has been its president. In 1872, upon the organization of the Loan and Trust Savings Bank, he was chosen a trustee and a member of the investment committee, and has been for some years vice-president of the institution. For many years he was a director in the Stark mills, Manchester, and almost no benevolent enterprise in Concord has been attempted without his co-operation and assistance. In the days of the old militia system, Major Downing acquired his title. He was a liberal contributor to the history of the carriage industry. He was universally respected,



LEWIS DOWNING, JR.

and at the close of his sixtieth year with the house he was tendered a dinner by his many friends in honor of the occasion. His life was spent in Concord, but his name in connection with the coach is known throughout the world.

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Trade News.

BY UNCLE SAM.

ALABAMA.

FLORENCE—The increase of the output of the Florence Wagon Works and the sales of the concern this year are the result of the large additions in machinery recently put in and the progressive business management inaugurated. The factory has a capacity of 16,000 wagons a year, and is now one of the largest concerns in the country. The wagon works were moved here from Atlanta, Ga., in 1899, and has had a phenomenal growth.

GADSDEN—Gadsden has captured another large industry, which is capitalized at $125,000. The Mecklin Wagon Company, C. L. Beare, president; W. N. Mecklin, general manager and patentee of the Mecklin wagon, compose the firm, with $125,000 stock, all paid in. The company was organized in Virginia and Gadsden was selected over many Southern cities because of its varied natural resources and splendid railroad facilities. Twenty acres of ground have been secured in the Thornton addition on the Chattanooga Southern road and inside the corporate limits and dirt has been broken. The main building will be 400 by 300 feet, two stories high, besides various other smaller buildings. The plant will turn out 10,000 finished wagons yearly. The entire wagon will be made here, giving employment to 150 skilled mechanics. The factory will be completed and in operation by Jan. 1, 1902.

HUNTSVILLE—Huntsville is on the eve of securing another large carriage factory. One of the leading carriage manufactories in Michigan is negotiating with parties in this city for the establishing of their plant which they propose to bring to Huntsville provided satisfactory arrangements can be made for a site and such like. The Chamber of Commerce, Hon. R. E. Pettus, president, will back up Huntsville's side. The two large factories here now are doing a fine business, and have orders ahead sufficent to keep them working the next year.

CALIFORNIA.

COLUMBUS"The Columbus Buggy Company has opened a fine carriage repository in the room adjoining the Rochdale store on Kern street.

SAN JOSE—A. Greeninger announced to the employes of his carriage manufactory yesterday that beginning next Monday nine hours will constitute a day's work instead of ten. Mr. Greeninger has made this move entirely independent of any pressure from his men. He acknowledges the justice of the nine-hour working day, and in view of the fact that so many employers are adopting the new schedule all over the State he feels justified in falling into line. At present the men begin work at 7 a. m. and quit at 6 p. m., with one hour at noon. Beginning Monday the men will go to work at 7:30 and quit at 5:30.

CONNECTICUT.

DUNELLEN—Work has been commenced on the addition to Call Brothers' carriage repository on Furnace street.

WATERBURY—Architect E. E. Benedict of Waterbury has plans in preparation for the proposed new carriage repository to be erected by Roscoe Benjamin in Winsted. It will be constructed of wood instead of brick, as was originally planned, being 39 by 51 feet. of mill construction. It will be four stories in height, with gravel or tin room.

DELAWARE.

LAUREL—The alrge three-story carriage factory of ex-Speaker E. B. Riggin is completed. The new factory is much larger than the one destroyed by fire in August.

GEORGIA.

SHELBYVILLE—The Spoke and Handle factory of G. W. Ransom & Co. burned. Loss over $10,000.

IOWA.

DES MOINES—The buildings for the Kratzer Carriage Company have been completed and the company is now moving its stock into them and preparing to enlarge its business. December 1 it is expected to be fully established and to have increased the working force to correspond with the increased building facilities. The new building is a three-story structure of slow burning construction and is 200 by 132 feet in size. It will afford the company about 126 per cent. more floor space than it has heretofore and will necessitate the employment of a force of 125 operatives to keep the work up to the capacity of the office force and sales department. The factory will now take rank among the largest in the country from which high grade carriages are turned out and will have a capacity of 8,000 finished jobs a year, with a maximum capacity of 10,000 finished jobs without working over time and of about 12,000 finished jobs when running under rush orders. It is the intention of the company for the next year to operate it up to the 8,000 mark and to possibly increase the output after that time.

ILLINOIS.

CHICAGO—Wadsworth Wagon Company, Chicago; capital stock, $2,500; incorporators, Charles D. Gammon, Emory Chase and George P. Gray.

CAIRO—Messrs. Schindler & Bucher, the practical wagon makers and horseshoers, have added a new Kelly-Springfield rubber tire machine to their shop.

INDIANA.

ANDERSON—The Anderson Carriage Company will enlarge its factory with another building 50 by 100 feet, two stories high and of brick.

CONNERSVILLE—The Connersville wheel works, owned by the Parry Manufacturing Company, of Indianapolis, will be removed to that city, and the buildings, now occupied by the plant, will be utilized by the Rex Buggy Company.

TERRE HAUTE—The Terre Haute Carriage and Buggy Company is being kept busy on orders for rural delivery wagons, which are to be shipped to all parts of the country.

KENTUCKY.

BOWLING GREEN—J. W. McCollum, of Chicago, is here with a view to establishing a wagon factory here, with a capital of $100,000. The Commercial Club and Board of Trade each had a meeting to consider his proposition, and a committee was appointed to investigate the matter.

LOUISVILLE—The Commercial Club has addressed a letter to the following carriage and wagon manufacturing firms of Cincinnati, calling attention to the fact that Louisville is in position to offer exceptional advantages in the way of location for their particular line of business:

Lion Buggy Company.
Anchor Buggy Company.
American Carriage Company.
Continental Carriage Company.
Frank G. Enger Carriage Company.
Highland Buggy Company.
James Myer Carriage Company.
Ratterman & Luth.
Sayers & Scoville.
Sechler & Co.

The reason for this action is found in the published accounts of war in Cincinnati between the carriage manufacturers and organized labor, which has reached such a stage of bitterness, according to the reports, that several of the manufacturers have announced their intention of leaving the city unless a change occurs.

MAINE.

CORNISH—Bradley Allen has bought the Frank Merrill shops. He will continue the manufacture of carriages in the large one, but is converting the small one into a dwelling house, which he will soon occupy.

BANGOR—Among the sufferers by fire on October 12 was C. M. Conant Co., dealers in farm implements, carriages, sleighs, harnesses, robes, dairy machinery and seeds. The stock on hand amounting to about $20,000, on which there is an insurance of about $13,000. This firm is also the transfer agent for the following concerns:

MASSACHUSETTS.

ATTLEBORO—Edgar W. Fuller has sold out his carriage business and has returned to Mansfield.

DANVERS—George W. Battye has bought James Pike's interest in the well known and long established firm of Pike & Whipple, wagon manufacturers. Mr. Pike retires from the firm on account of illness. The plant is one of the most successful in the country, its product being sent to places remote as well as near. Mr. Battye has been employed by the firm for a number of years and has a thorough knowledge of the business and has always had its interests at heart. He is a worthy successor of a notable manufacturer. Augustus H. Porter has also bought an interest in the Pike & Whipple wagon business and the comfortable things said of Mr. Battye are equally applicable to Mr. Porter.

COHASSET—The business of the Tilden Carriage Co. is located at the head of Cohasset harbor, at the junction of Elm and Margin streets, and its cluster of brick red buildings is familiar to every one who is at all acquainted with the town. It was established in 1827 by Amos Tilden, a true old school gentleman, who was a descendant in the eighth generation of Nathaniel Tilden, one of the original settlers of Scituate in 1627. Amos Tilden was a familiar figure among Cohasset's business men for 40 years, and was a typical village blacksmith of the old time, and might have stood for Longfellow to model his poem of that name upon.

The business descended to Charles F. Tilden from his father Amos in or about 1860, and was conducted by him until his death in January, 1900. From a little country blacksmith shop he built up the present flourishing business, and by hard and persistent industry. The factory is at present conducted by Herbert A. Tilden, the third in line of that name to do business in this loca-

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tion. It is at present producing mainly business work, and has on its books orders to keep it fully employed for several months to come. Mr. Tilden is contemplating enlarging its present capacity and the employment of additional help. The factory at present in the wood, smith and paint shops, employs eighteen men.

WEBSTER—Wilson & Scribner have purchased the blacksmith and carriage business of Louis Mathieu on Chase avenue, and are conducting the same with vigor and excellence.

MARYLAND.

DENTON—Rudolph Anklam will soon begin the building of a wagon factory near the railroad depot. He will utilize a water-power to drive lathes.

MICHIGAN.

FLINT—For about a year past the Durant-Dort Carriage Company has been building spring wagons in the top and gear plant, but to the burning of plant No. 2, known as the Webster plant. The new factory, which was built to replace the one destroyed by fire, is completed. The new factory will mean the addition of 150 men to the city's inhabitants.

The Durant-Dort Carriage Company has increased its capital stock from $1,200,000 to $1,500,000. The company filed amended articles of incorporation with the Secretary of State.

GRAND RAPIDS—The Belknap Wagon Works is now installing a considerable amount of new machinery, boring machines and saws, for sleigh work, and on account of the press of work in the factory the installation has to be done at night. There are four machines being installed, which cost about $1,000. The rush at present is in getting out sleighs for the winter trade. The most urgent orders are those for Alaskan traffic, the sleighs being needed at once. They are of the special pattern manufactured for the Western and Alaskan trade, being very heavy and substantial and very long on the runners. During the summer the company manufactured more than 300 fruit wagons on Western Michigan orders, showing the extension of the fruit business in this section. The prices of these average from $70 to $90. Besides these regular decked fruit wagons for carrying fruit to market the company put out about 400 orchard wagons of a type that has proved very popular all over the country, orders having been filled from as far east as Connecticut and as far west as Portland, Ore. Wagons of this class were also sent as far south as Mississippi and Georgia. This wagon is built very low and light with a combination reach so that it can be manipulated by one horse among the trees of an orchard and make the turns required easily. These wagons cost about $30 each.

PONTIAC—Sylvester Cole has bought out the interest of R. J. Lounsbury, E. M. Murphy and S. E. Bache in the Acme Vehicle Co., and will hereafter conduct the business alone. The Acme is one of the new companies to enter the carriage business here. It succeeded the Halfpenny-Giles Company.

Contracts have been awarded for erecting the new factory of the Crescent Vehicle Co. In size it will be 81x161 feet, four stories high and will adjoin the C. V. Taylor factory. It is to be completed within sixty days and will be occupied at once by the company, which was organized here but a short time ago.

MINNESOTA.

ST. PAUL—The warehouse adjoining the H. A. Muckle Carriage Manufacturing Company at Milwaukee and Cleveland avenues, Merriam Park, was almost totally destroyed by fire yesterday, and but for the timely discovery of the blaze by a passerby, the fire might have resulted in the loss of the plant also. As it was, however, the manufacturing department, which was separated from the warehouse by a fireproof wall, is intact, being not damaged at all. The three large fireprof stock vaults, containing a large amount of merchandise, also escaped the threatening blaze. The warehouse was a three-story brick building, 150x50 feet, and the loss to the building and contents will amount to about $25,000. The fire was discovered at 12:15, when the employes were at dinner, and Mr. Muckle is of the opinion it was caused by some one of the workmen throwing a lighted match carelessly on some inflammable material near, or on the stairway on the second floor. The first floor was occupied as a showroom and contained a number of buggies and cutters, while the second floor contained a number of hickory wheels and shafts, which burned merrily when the flames reached them. There were about 400 cutters on the fourth floor and these were entirely destroyed. The loss was partially covered by insurance. The fire would not hinder the company from resuming operations as usual this morning, and that they would be just as well prepared as ever to receive and fill all orders. The office, which adjoins the warehouse, was not damaged. The Muckle Manufacturing Company has been established in St. Paul for the past fourteen years and the present quarters were built in 1895. From fifty to seventy-five men are employed.

WINONA—Assignee C. A. Morey of the Gate City Carriage Company has accepted on behalf of that institution an order for $5,000 of light wagons from California parties, the order to be filled by the first of the year.

MISSOURI.

KANSAS CITY—The directors of the Western Retail Implement and Vehicle Dealers' Association have been petitioned by members and by dealers not identified with the organization to call the next convention for some time in January instead of in December, as has been the custom for twelve years. The petition, which contains many signatures, was presented to the directors at the Coates House this morning and this afternoon they consulted many of the leading implement dealers of the city in reference to it. Their decision probably will be made known in the morning. "There will be an attendance of over 1,500 at the convention," said Secretary H. J. Hodges, of Abilene, Kan., this afternoon. "The association's growth is continuous. Many prominent retail dealers of Colorado, Oklahoma and Indian Territory have joined since the last convention. The next will be the thirteenth annual convention held in this city. The directors will decide upon the place for the holding of the convention."

NEW HAMPSHIRE.

CONCORD—W. L. Whitney of Berlin has purchased A. M. Walter's interest in the carriage house furnishing, and undertaking busines and will continue at the same old stand.

LITTLETON—C. F. Harris & Co., who recently sold their carriage shop to the Pike Manufacturing Company of Pike's Station, have purchased the carriage property of N. W. Ranlett, who will retire from business. Mr. Harris is to instal a new power, as the old one is not sufficient for his business, but will make no additions at present, although he is contemplating the erection of a store house. He will employ six men in his new quarters.

WARREN—F. M. Upton has sold his carriage shop and also his dwelling house to W. R. Park. He also will build on Canal street.

NEW JERSEY.

TRENTON—The carriage works of J. R. McCardell & Co. will resume operations at its new quarters in the old Phoenix Iron Works on South Warren street this morning. The plant will start with about forty hands.

NEW YORK.

GENEVA—The Geneva Wagon Company has received a large order for vehicles from South America. The company is building up a large trade in that country. The present order calls for 125 vehicles, to be shipped not later than November 20.

NEW YORK—Benjamin Barker has been appointed temporary receiver of the assets of the Lengert Wagon Company, of Nos. 302 to 306 West Fifty-third street, against which concern a creditors' petition in bankruptcy was filed on the 25th inst., by Judge Adams of the United States District Court.

PEN YANN—The spoke factory of A. J. Dibble, which was destroyed by fire several months ago, is being rebuilt. Mr. Dibble is having the work pushed as rapidly as possible.

SENECA FALLS—The directors of the newly organized Atkins Wagon Company held a meeting in this village last Monday. The following officers were elected or one year: President, Harry M. Glen, of Seneca Falls; vice president, William Atkins, of Auburn; secretary, E. J. Waldron, of Seneca Falls; treasurer, Samuel Odell, of Auburn. The company is now manufacturing wagons in Moravia.

SYRACUSE—The large addition to the Moyer Carriage factory in Wolf street is practically completed and during the past week a portion of the building was taken possession of. The erection of this new building makes it possible for the company to increase materially its capacity, and employment will be given to more men. Mr. Moyer declares that the carriage business has reached a state of unusual prosperity.

OHIO.

CINCINNATI—The E. P. Piepho Carriage Company is the name of a new vehicle manufacturing concern that has been organized largely through the efforts of the well known sarriage manufacturer whose name it bears. The company has purchased the Breed Carriage Company, of Milburn, Ky., as a going concern, and will increase the plant and add to its capacity. The new company is incorporated with a capital stock of $25,000. The officers are: E. P. Piepho, president and treasurer; Frank P. Helm, vice president; George W. Shepherd, secretary and superintendent, and these, with C. R. Adams, of Wilmington, Ohio, and J. C. Adams, of Cincinnati, directors. Mr. Piepho was for years, until a few months ago, the president of the T. T. Haydock Company. Colonel Helm is the president of the First National Bank of Newport. Mr. Shepherd has been a resident of Columbus, where he has been in the carriage manufacturing business. While the new company will be located on the other side of the river it will be in the Cincinnati carriage trade. Milburn is 30 minutes out from Cincinnati on the Chasapeake and Ohio Railroad, about two miles up the river from Coney Island. Mr. Piepho will still live in Cincinnati, going and coming the same as a suburban resident to his downtown business. The factory is now in operation, and will be kept going right along.

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The additions to the capacity will bring the output up to 6,000 jobs a year of buggies, surreys, phaetons and other styles of medium vehicles.

STRUTHERS—The J. A. & D. P. Cooper Company is making quite extensive repairs to its carriage works here. The company recently purchased from the Struthers estate a tract of land adjoining the factory, so that still greater additions may be made as the increasing trade demands.

PENNSYLVANIA.

ATHENS—Ground was broken Monday for the erection of a building to be used by G. F. Johnson as a carriage factory. The building will be of brick, two stories high and 36 by 56 feet in dimensions. The structure will be ready for occupancy January 1 and in it will be placed teh latest and most improved machinery for the manufacture of carriages. The factory will employ several skilled workmen.

BRADFORD—Mr. S. B. Foraker, who has been employed at Kittanning for the past four months, has returned to the city and will open a carriage painting and trimming establishment.

PHILADELPHIA—The Gregg Carriage Company, northeast corner Twelfth and Arch streets, is among the leading carriage emporiums of the country. Established in 1855 by the late H. Gregg, the firm has kept pace with the modern ideas in the building of first class road and pleasure vehicles. The president of the company, Mr. William Bour, is a veteran in the carriage business, and the excellent reputation of the house is sure to be maintained. Their show room is the largest in the city. The firm is constantly changing its stock, and have now on hand many bargains, which will be speedily disposed of to make room for newer designs of pleasure vehicles.

READING—Fully 300 men are employed in Reading in the carriage and wagon building industry, which has grown to large proportions. The season has been active and the local plants have all been very busy. Reading mechanics have a wide reputation as builders of wagons or carriages. The product of local plants is probably in use in every city in the country, as the factories advertise largely and have a large output. Among the firms which

SCRANTON—The stockholders of the Scranton Axle Works F. R. Albright, D. M. Albright, W. H. Albright, F. R. Himmelberger, George W. Biehl, E. W. Kreider, Frank M. Leh, J. Troop, Wetherhold Bros., G. H. Smith, D. Goodman, F. Y. Hemmig, R. Shadell, S. M. Ulrich.

SCRANTON—The stockholders of the Scranton Axle Works Company met at their annual meeting in the office of Colonel E. H. Ripple in the Connell building and elected the following old board of directors: William L. Connell, Cyrus D. Jones, Chas. B. Scott, Ezra H. Ripple, S. S. Spruks, John Gibbons and E. J. Robinson. The directors met shortly afterwards and re-elected the following officers: President, E. H. Ripple; vice president, W. L. Connell; secretary and treasurer, R. R. Weisenfluh.

RHODE ISLAND.

HOPKINTON—After a business career of thirty-five years, George H. Spicer, the veteran wagon builder of Hopkinton City, has leased his carriage shop to Roger W. Lewis and retired from business. Mr. Lewis has been employed in Mr. Spicer's shop for nearly twenty years. Mr. Spicer began business at the City in 1867, and is very widely known, specimens of his work having been distributed far and wide throughout southern Rhode Island and eastern Connecticut. Having worked faithfully during all these years, Mr. Spicer considers himself entitled to a rest, which he proposes to take.

TENNESSEE.

BRISTOL—Bristol has secured another enterprise, this time a spoke and hub factory, now operating at Harriman, Tenn. It is the intention to move the factory to this city and have it in operation on or about the first of November. Mr. C. A. Beveridge, general manager of the plant, spent several days closing deals and completing arrangements.

SHELBYVILLE—The large spoke and hub factory of G. W. Ransom & Co., this place, was totally destroyed by fire on October 8, and with it the firm lost all of the machinery, a large lot of valuable finished and unfinished work, as also a fine lot of lumber and lumber logs. The entire loss is variously estimated at from $10,000 to $20,000, with only $1,350 insurance. The destruction of the plant puts a number of worthy men out of employment and is in every way a serious loss to the town and county. The fire, it is said, was in some way caused from the engine.

TEXAS.

HOUSTON—W. O. Brown of Wocco will establish a carriage repository at Houston, operating as the Perry Carriage Co., with W. C. Perry as president.

WEST VIRGINIA.

FAIRMONT—Messrs. Simpson & Snyder have sold their carriage shop to Detrick Brothers of Kentucky. The new firm will take charge of the factory in a few days.

Wants.

Help and situation wanted advertisements, one cent a word; all other advertisements in this department, 5 cents a word. Initials and figures count as words. Minimum price, 30 cents for each advertisement.

SITUATIONS WANTED.

Wanted—A situation as superintendent or assistant by first-class all around carriage man and practical draftsman. Address Box "A82," care THE HUB.

A first class trimmer wishes employment. Have been head trimmer in a large factory for the past fifteen years. Address "J. D.," Box "A83," care THE HUB.

Wanted—Position as foreman in a spoke factory. Years of experience in making wagon and buggy spokes. Reference given. Address "SPOKES," Box A77, care THE HUB.

A retired carriage maker, good address, steady habits, active, inventive and intelligent—can speak German—will accept position as salesman, or handy all-around man, or manager in some good moderate sized carriage factory. Best reference furnished. Would invest a little. Address "HANDY MAN," Box A80, care THE HUB.

An experienced and successful carriage salesman, who has a wide acquaintance among Eastern dealers, and who has just severed his connection with a prominent New York State manufacturer, would like to communicate with a wholesale carriage builder who wishes to extend trade in the Eastern territory. Best references. Write at once to "EXPERIENCED," Box A81, care THE HUB.

Manufacturers of carriages, wagons, harness, or the accessory lines, who are in need of salesmen, and who want to engage high class men able to sell goods, should write at once to L. H. Kronfeld, secretary of the Carriage, Harness and Accessory Traveling Salesmen's Association, Mt. Vernon, N. Y.

HELP WANTED.

Wanted—Superintendent, must be thoroughly posted and capable of taking charge of a large carriage factory. Address with reference, "SUPERINTENDENT," Box A84, care THE HUB.

Carriage mechanics, blacksmiths, painters, trimmers, ware-room craters and wood workers wanted. Cincinnati, the carriage manufacturing center of the United States, needs more carriage workers for its increasing trade. Twenty-nine shops built 150,000 vehicles this year. Steady employment. Good wages; good schools; rents and living cheap. Address with reference, U. S. VEHICLE MANUFACTURERS' ASSOCIATION, Box 103, Station F, Cincinnati, O.

Wanted—Hustlers to secure new subscribers for THE HUB. A good chance to make money easily. Subscription price, $2.00 a year. Liberal commission paid. Address Subscription Department, THE HUB, 24-26 Murray street, New York.

PATENTS.

PATENTS.—H. W. T. Jenner, patent attorney and mechanical expert, 607 F street, Washington, D. C. Established 1883. I make an examination free of charge, and report if a patent can be had and exactly how much it will cost. Send for circular.

FOR SALE.

Wheel securing device, (patented), simple and effective, no pins or springs. Nuts cannot come off, use one thread for all wheels. Adds five times its cost to selling value of vehicle. Will sell outright or on royalty. Address "R. E.," Room 412, 100 William St., New York.

Solid rubber tire patent. Entirely new principle. Cannot get off the rim. Economical. Experienced tire men say it is the best they have ever seen. For particulars address "RUBBER TIRE," care of THE HUB.

MATERIALS WANTED.

Wanted—A second-hand light passenger theatre coach, seating eight on inside, with outside or top seat for four. Must be in good order. State condition, weight and price. Address "OMNIBUS," Box A85, care THE HUB.

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COLOR SECRETS.

No. 46.—Where is the Secret?

A business friend said he had long wondered why the Murphy people called their color ads "secrets"—that the rare value of their colors was no secret—that the fineness of the materials used in making them was no secret—that the perfection of the grinding was no secret—that every skilled finisher knew they were perfectly ground—that the precise duplication of any shade, at any time, was no secret:—indeed, that these facts of fine material and perfect grinding and precise duplication, were the facts which the Murphy people are anxious that everybody shall know; the facts they are constantly advertising; the facts they depend on for the sale of their colors. Where is the secret?

Well, our friend concluded that it was something of a secret just to keep the uniform high standard. In this world of mistakes and accident, where things often appear to go wrong without a cause, it is a very important secret that any line of goods can be kept invariably at the limit of excellence. The best tailor now and then gets your coat askew. Do you not find a poor cigar occasionally in a box of the rarest brand? How do the Murphy people always maintain the standard? They seem to know, but they don't tell.

And then, it is a beneficial secret that goods of such uniform superiority—goods that wear so long and look so well—can be sold at prices so little in advance of the prices for very ordinary goods. The Murphy people could tell how that is done, but it would seem like boasting.

MURPHY VARNISH CO.

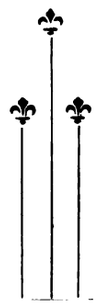
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Fowler

Daily Demonstration

At Cincinnati Exhibition, November 18th to 23rd.

We have a large space at the coming Cincinnati Show, and will give daily demonstrations. Come and see us and we will demonstrate for you. Drop around and get acquainted.



Fowler Elastic

CHICAGO

Elastic

At The Exhibition

We started 30 (not 29 or 31, just 30) shops on our system at New York. While this is but a small percentage of all yet it is a surprising number when you think it over, every thing considered. In addition we made appointments with 64 other shops to go at once and demonstrate.

If we didn't have the materials to justify it, we would neither get orders nor be able to make demonstrating appointments, would we? That's a dead certainty.

At the Cincinnati C. B. N. A. Show the signal success achieved at New York was repeated. Manufacturers, dealers, agents, everyone was interested.

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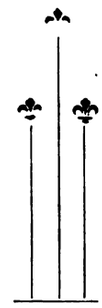
Enamel

No Mushroom Outfit

For four years did we experiment and await the results of our method before asking the trade for a $'s worth of business. We have done all sorts of work, new, burned-off, and repair. We did not confine ourselves to broughams, hearse, undertakers' wagons, and light spring work, as we painted great, heavy truck wagons, railway coaches, patrol wagons, delivery wagons, automobiles, and the like. We made certain of our material before going for business—we're now out for business, on business principles, and make the statement that we can get an order from any concern who will interest themselves to the extent of letting us demonstrate and seeing what we can actually do.

namel=Paint Co.

ILLINOIS.



The Fowler Elastic Enamel Paint

simplifies the process of finishing a job. It produces a smooth, hard, glossy finish that has exceptional depth and lustre. It don't crack or peel, and maintains a lustre that is a revelation. Our Elastic Enamel Paint contains 60 per cent. lead and oil.

Get our little book for further and fuller information.

Kindly mention THE HUB in writing.

Fowler Elastic Enamel Paint Co.

397 Wabash Avenue, CHICAGO.

Paint

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The Best Two-Wire Tire on the Market : :



The Best Two-Wire Tire on the Market : :

The GOLD For Only MEDAL Tires

.... Given at the Pan-American .... Exposition, was awarded to the

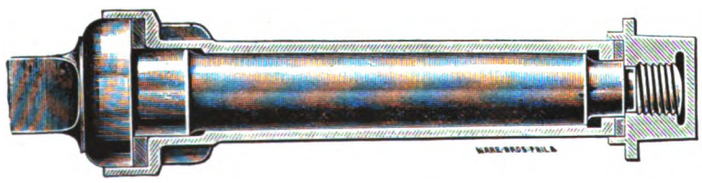
PENNSYLVANIA RUBBER CO.

ERIE, PA.

Do you want the Best Solid Tires? Write us for Prices.

Doctors' Special Axle.

This is the finest Axle on the market for light and medium weight Carriages.



In it there is more value for the money than in any other at any price. Full particulars sent on application.

To it, when desired, we can at a small extra cost apply the Brewer Longitudinal Axle Lubricator, which is the simplest device known for continual lubrication, and has the added merit of not weakening either arm or box by the removal of metal at vital points and does not allow oil to leak out.

Dalzell Axle Co., South Egremont, Mass.

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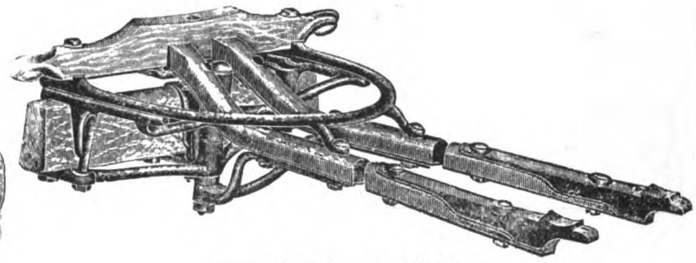
ANDREW KIMBLE, GEAR WOODS

YOUNG TOUGH BUTTS



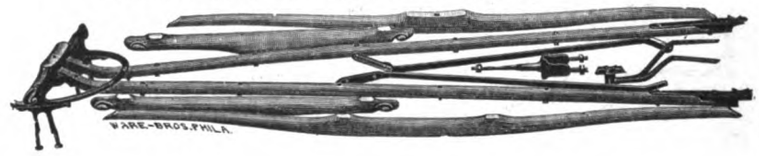
TRADE MARK

and Patent Bent Reach Rear King Bolt Malleable Wheel.....



SPECIAL NOTICE

The attention of the trade is called to my letters patent No. 654,460, issued July 24, 1900, for Combination of Rear King Bolt Bent Reach Fifth Wheel, as we shall hold all infringers liable to the full extent of the law, whether manufacturers, seller or users.



ALL STYLES OF GEAR WOODS MADE TO ANY PATTERN



Gear Woods Ironed with Derby, Brewster and Malleable Wheel. Single and Double Reach Phaeton. Straight Sill and Cut-Under Surreys.

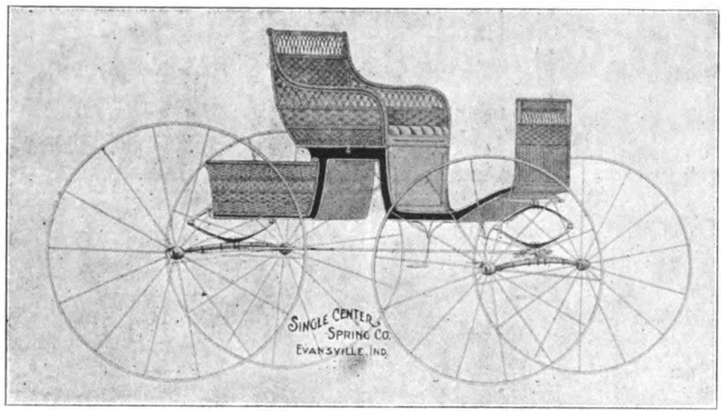
ANDREW KIMBLE,

ZANESVILLE, OHIO

Don't you mind if others say
That advertising doesn't pay.
Such people surely—there's the rub—
Have never patronized THE HUB.

You are reading this ad. Why don't *you* buy this space, so others will read about *your* business?

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No. 200. Easter.

Beauty Is Only Skin Deep

This is true of vehicles as well as individuals. In other words vehicles must possess other virtues besides transient beauty.
Single Center buggies are universally conceded to have three cardinal virtues—beauty, strength and moderate cost.
Catalogue showing our full line for the asking. All we ask is, give us a trial. The buggies will do the rest.

Single Center Spring Co.

EVANSVILLE, IND.

PALM, FECHTELER & Co.

YOU KNOW OUR

TRANSFERS

IF NOT, TRY THEM.

80-5th AVENUE NEW YORK.
45 LA SALLE ST. CHICAGO.
207 ST. JAMES ST. MONTREAL.

H. COOK, Pres. F. COOK, Sec. & Treas.

H. COOK & CO.

MANUFACTURERS OF

Surreys, Buggy Bodies,

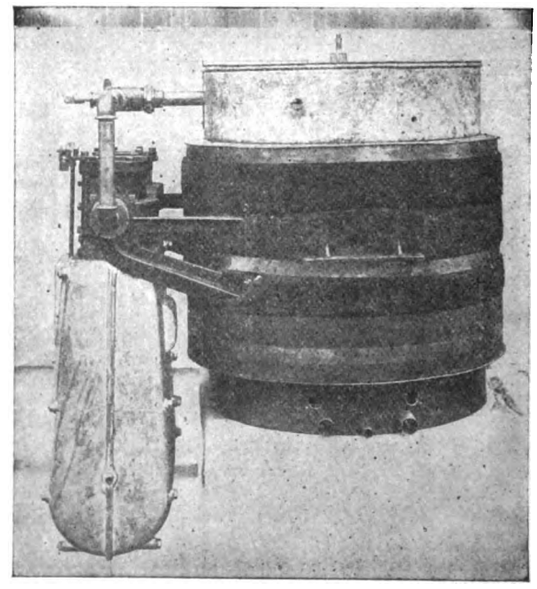


Stick Seats, Etc.

AND ALL KINDS OF BODIES.

Court Street and McLean Avenue,

CINCINNATI, O.



The above cut illustrates our oil encased engine suspended from bracket fastened to boiler. The engine being hung flexibly to boiler to allow chain adjustment. Burner is our three part construction with pilot light. We furnish this style in two sizes for heavy vehicles, also smaller sizes of boiler and engine for light carriages.

ENGINES, BOILERS, BURNERS AND FITTINGS.

HIGH GRADE VEHICLES BUILT TO ORDER.

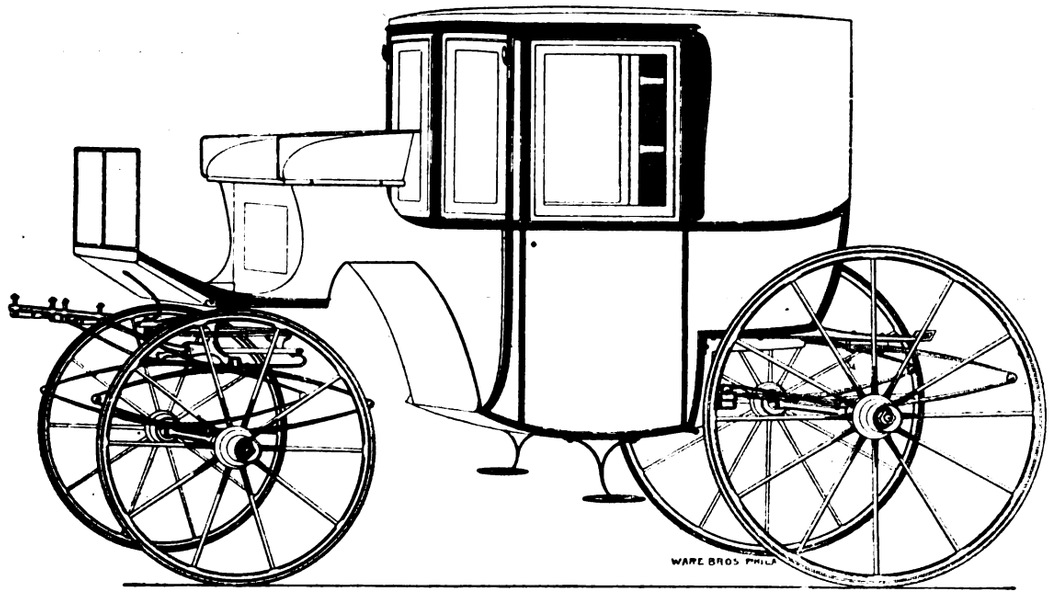
EDWARD S. CLARK,
272-278 Freeport Street, Harrison Square,
Long Distance Telephone Connections. BOSTON, MASS.

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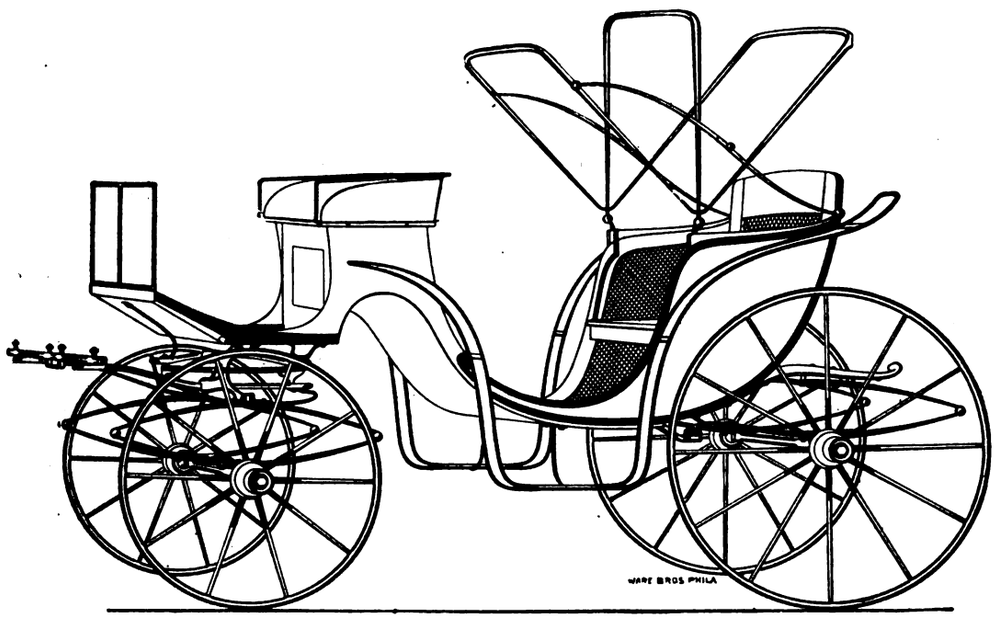
CARRIAGE AND AUTOMOBILE

... BODIES ...

"Horton" Grade STANDS FOR Highest Grade



UP-TO-DATE CARRIAGES IRONED IN THE WHITE.



... BODIES ...

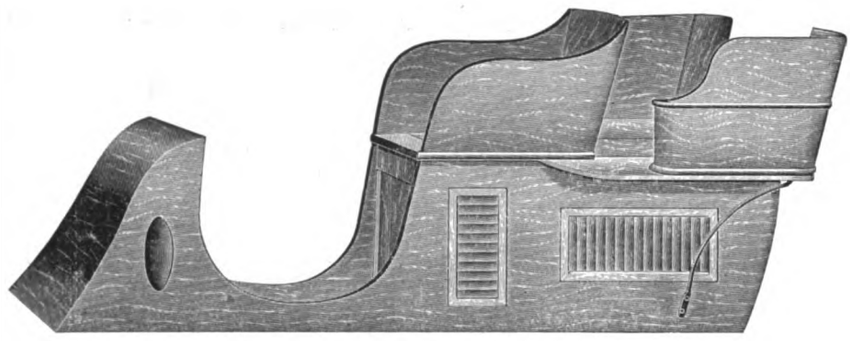
I have moved to 127-131 Park Street.

H. A. HORTON, NEW HAVEN, CONN.

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THE FRANTZ "AKRON."

BODIES. BIKES IN THE WHITE. GEARS.



Automobile Bodies a Specialty.

We Sell them Cheaper than you can Make them. . . . . .

We Name a Surprising Low Figure on this Bike. . . . . .

ORDER SAMPLE.

No Better Value for the Money on the Market.

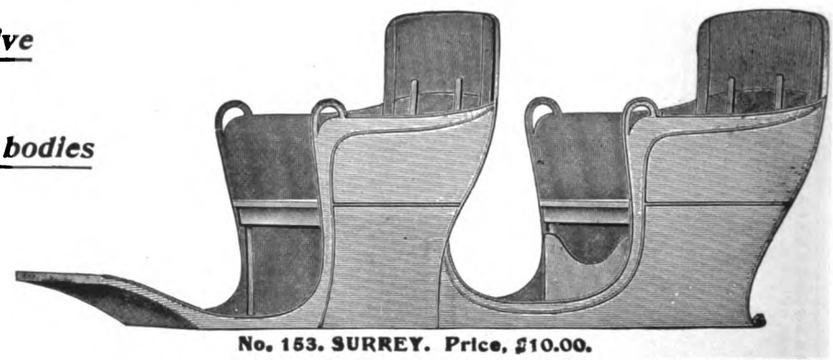
THE FRANTZ BODY MFG. CO., AKRON, OHIO.

BODIES! BODIES! BODIES!

Many new and attractive designs for 1900.

A choice lot of stylish bodies always in stock.

REQUEST WILL BRING CATALOGUE AND PRICES.



No. 153. SURREY. Price, $10.00.

CINCINNATI PANEL CO., Cincinnati, Ohio.

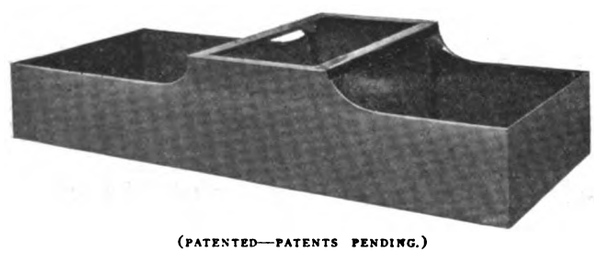
No more " open " corners.
Will not rattle.
Are very durable—in fact, practically **indestructible.**
We obtain a beautiful piano polish finish by baking the enamel on.
Will not stain.

SEE OUR EXHIBIT, NEW YORK SHOW, OCTOBER 14--19. ....

WRITE US.

THIS IS THE METAL AGE

And this is the FUTURE body for vehicles.



(PATENTED—PATENTS PENDING.)

We have already booked orders from some of the largest manufacturers.

The finish is far more durable than on wood.

The moment you equip the Eastman Body, just that moment you enhance the value of your product.

MADE ENTIRELY OF METAL, LIGHT AND STRONG.

The Eastman Metallic Body Co.,
Dept. B, CLEVELAND, OHIO.

Please mention "The Hub" when you write.

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Announcement...

1900

The KEYSTONE CARRIAGE Co.
Of CINCINNATI, OHIO
Cordially invites the dealer to look over their new entries of "THOROUGHBRED" Vehicles at

The Cincinnati Exposition
NOVEMBER 18th to 23d



OUR most popular designs of last season will be continued this season, to which have been added several new designs. We solicit your careful investigation in quality and prices. We feel confident your interest will mean your patronage. : : : : : : :

"BACK THE WINNER."

•••••

The KEYSTONE CARRIAGE Co.

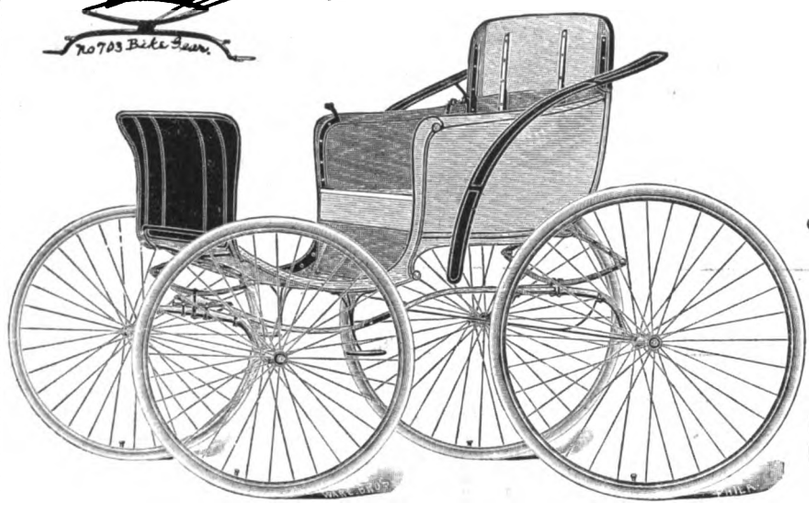
Manufacturers of "Thoroughbreds"
CINCINNATI, OHIO

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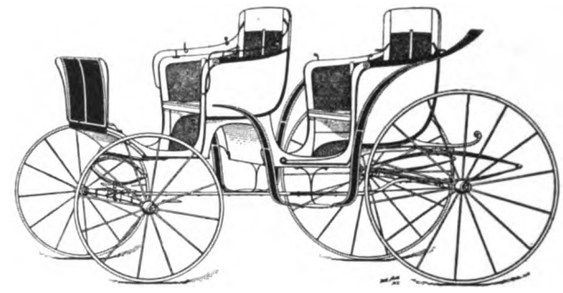
Schubert's Wagons

IN-THE-WHITE





No. 1265. Bike Phaeton.



No. 1300. Four Passenger Phaeton Surrey.

High Quality Right Price

Very latest styles. Send for our new catalogue. Just out.

WE ALSO BUILD

Automobile Bodies

Schubert Bros. Gear Co.

ONEIDA, N. Y., U. S. A.

High Grade Wheels.

Zwick & Greenwald Wheel Co.

DAYTON, OHIO.

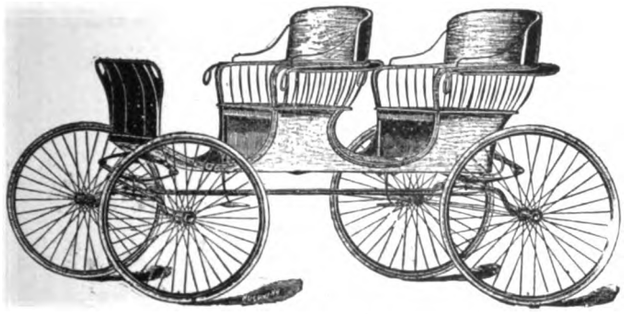
Manufacturers of

Vehicle ...Wheels

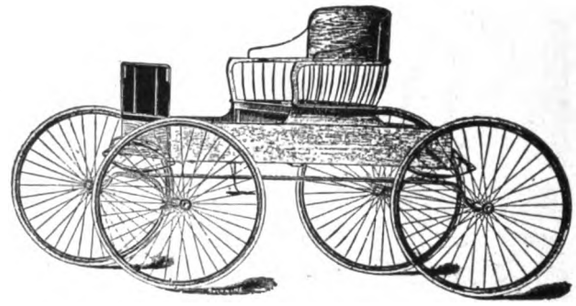
of Every Description.

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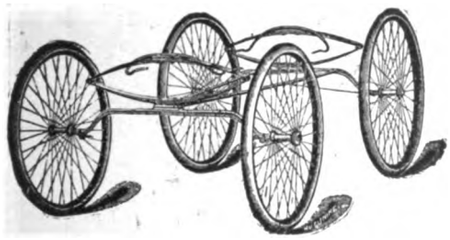
FITCH GEARS



FITCH PNEUMATIC SURREY (In-the-White).



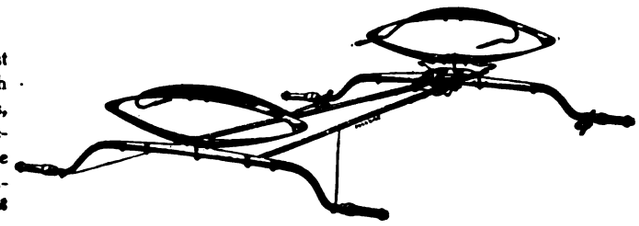
FITCH PNEUMATIC ROAD WAGON (In-the-White)



FITCH PNEUMATIC ROAD WAGON GEAR.

PRICES TO SUIT THE TIMES.

Send for our latest catalogue, with full line of gears, wagons in-the-white and carriage specialties illustrated.



FITCH IMPROVED BIKE AND PNEUMATIC GEAR.

We make Bike Gears and Wagons in-the-White, with Wood Hub Wheels and Solid Rubber Tires.

SHOWING ALL STYLES OF PNEUMATIC AND BIKE WORK.

FITCH GEAR CO., Rome, N. Y.

THE MILLER CARRIAGE SUPPLY CO.

1853 BELLEFONTAINE, OHIO, U. S. A. 1853

Pioneers, Scientific Designers and Builders of

ORIGINAL STYLES HIGH GRADE BODIES, INCLUDING, STANDARD AND NOVEL TYPES OF BODIES FOR

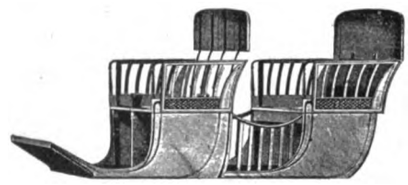
SEND FOR CHARTS... **AUTOMOBILES** SEND FOR PRICES ...



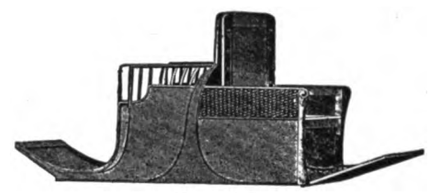
No. 731½ A.

MAJESTIC

Our most ingenious and practical **ADJUSTABLE AUTOMOBILE BODY.** Here shown as 2 passenger Patent applied for.



No. 432½. **TRAP SURREY.** Entrance through front seat.



No. 731½ B.

MAJESTIC

Already very popular is the **ADMIRABLE AUTOMOBILE BODY.** Here shown in 4 passenger form. Patent applied for.

Gear Woods, Shafts and Poles

MADE BY

THE PARK COLVILLE & HERRICK CO.

AT

MOUNT VERNON, - OHIO

CAPACITY, 600 SETS OF GEAR WOODS AND 40 DOZEN PAIRS OF SHAFTS PER DAY



A THOROUGHLY EQUIPPED MODERN FACTORY... Write us for Prices

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FOR SWELL TURNOUTS

"THE ARMSTRONG"

Thousands in Use all Over the World

Our Two-Leaf Spring for Buggies, have you tried them? If not, write to us and let us tell you why it is to your interest to use them. Oblige us by mentioning this paper when you write. : : : : : : : :

J. B. ARMSTRONG MFG. Co.

FLINT, MICHIGAN

ALL KINDS OF CARRIAGE AND WAGON SPRINGS

Please mention "The Hub" when you write.

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ESTABLISHED. 1890.

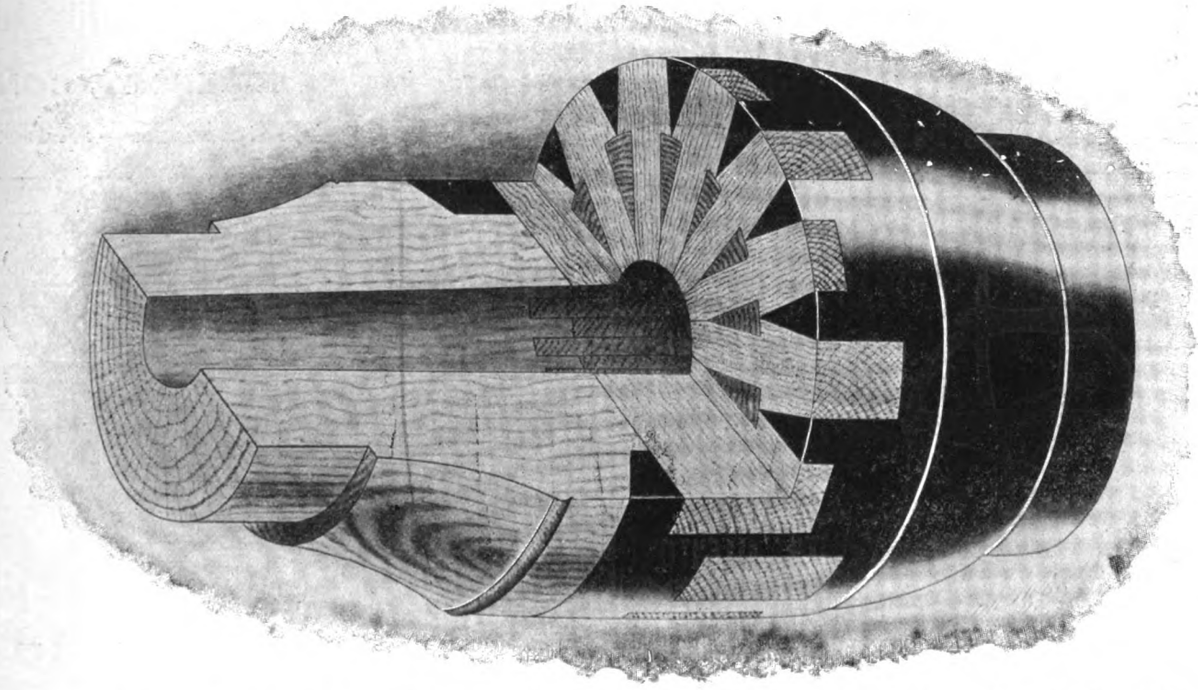
OUR SPECI-ALITIES.

OUR WHEELS ARE THE BEST.

WE HAVE ONE OF THE MOST COMPLETE PLANTS FOR PUTTING ON STEEL TIRES IN THE UNITED STATES. WE ALSO APPLY SOLID RUBBER AND PNEUMATIC TIRES.

HUB · SCHAD · SARVEN · WARNER · SWEET · KENNEY · COMPRESS · EDBAND · AND · WOOD

WE SELL WHEELS COMPLETE. WE USE THE KELLY-SPRINGFIELD SOLID RUBBER. NO EXTRA CHARGE FOR WOODBURN FLANGE.



OUR LEADER IS THE SCHAD HUB

IT IS THE HANDSOMEST AND STRONGEST HUB ON THE MARKET.

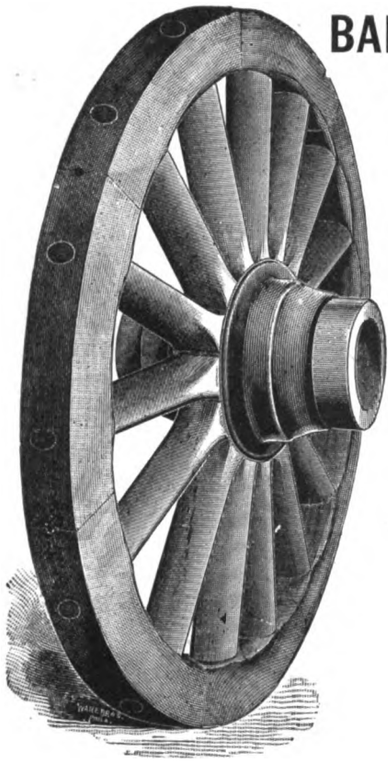
THE SPOKES CANNOT GET LOOSE IN THE HUB.

AVOCA WHEEL CO.

AVOCA, N.Y. U.S.A.

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Edward Stinson & Co.



BALTIMORE WHEEL FACTORY,

MANUFACTURERS OF

Warner,
Sarven,
Plain,
Compressed
Band and
Sweet's Hub

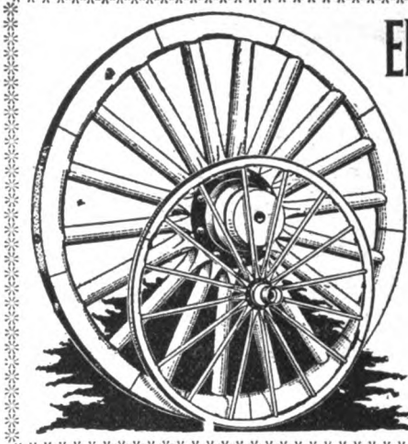
WHEELS

ALL SIZES.

With or Without Steel, Iron or Rubber Tires.

OUR MAKE WARNER WHEEL

327-335 North Street,
BALTIMORE, MD.



EBERLY & ORRIS

MECHANICSBURG, PA.

Manufacturers of ...

Light and Heavy

WHEELS

Wheel Stock and Hard Wood Lumber

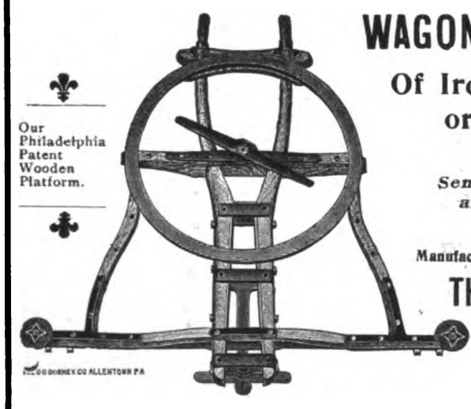
WHEELS

WHEEL MATERIAL AND BENT WOOD WORK

The Wheel & Wood Bending Co.,

Send for Catalogue. BRIDGEPORT, CONN.

BEST PLATFORMS AND COMPLETE WAGON GEARS.



Our Philadelphia Patent Wooden Platform.

Of Iron, Steel or Wood.

Send for Catalogue and Price List.

Manufactured by

THE ALLENTOWN PLATFORM CO

ALLENTOWN, PA., U. S. A

HEAVY AND LIGHT .. Platform Gears

With High or Low Front Wheels



I build them from 1 1/8 to 2 3/4 in. Axle

Send for Catalogue, giving price on a full line of Buggy, Bike and Business Wagon Gears, Wheels, Carriage and Wagon Hardware of every description.

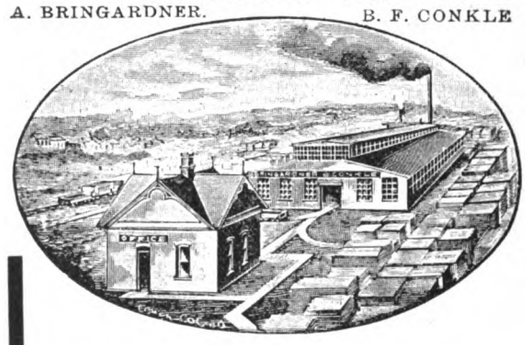
Export Orders a Specialty.

WILLIAM W. BOOB, – 450 E Main St., Centre Hall, Pa., U. S. A.

DON'T forget that "THE HUB" reaches the very people YOU want to reach.

ESTABLISHED 1879

A. BRINGARDNER. B. F. CONKLE



PROMPT DELIVERY

BRINGARDNER & CONKLE

Manufacturers of

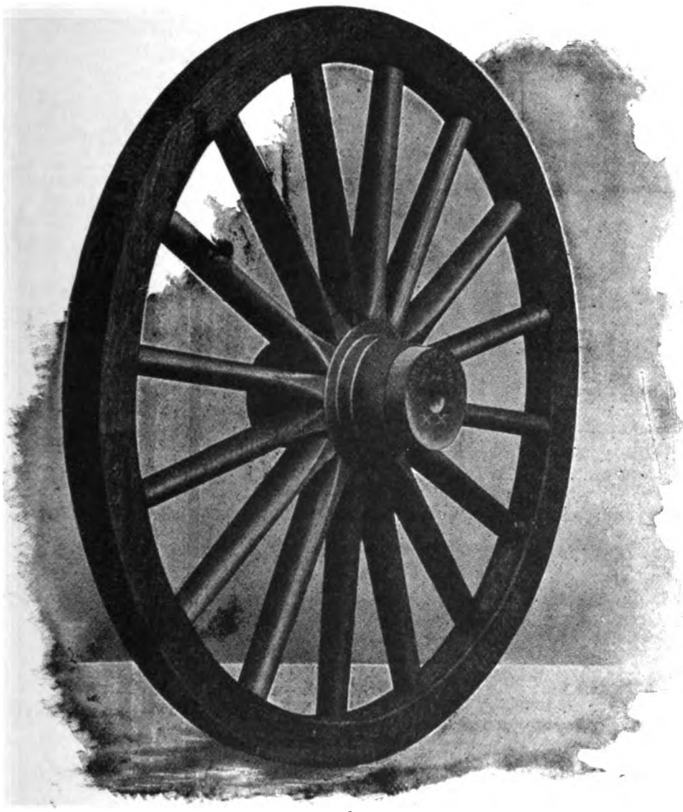
Carriage Woodwork,
Elliptic, Side Bar,
Phaeton and
Carriage Gearing

Office and Factory at - - JUNCTION CITY, OHIO

GREATER CAPACITY THAN ANY OTHER CONCERN OF THE KIND IN THE WORLD

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HOOPES BRO. & DARLINGTON



WESTCHESTER, P.A., U. S. A.

Makers of...

WHEELS

For

Carriages, Automobiles, Business Wagons and Trucks.

Warner, Sarven, Kenney, Sweet, Wood Hubs.



CRANE & MacMAHON,

No. 18 South Street, New York.

FACTORIES:
VIRGINIA and NORTH CAROLINA WHEEL CO., ST. MARY'S SPOKE WORKS,
and WAPAKONETA BENDING CO.

WHEELS SARVEN, WARNER,

and WOOD HUBS, Heavy and Light. Heavy Wheels for Business Wagons a Specialty.

MANUFACTURERS OF ★ BRANDS OF
CARRIAGE AND WAGON WOOD STOCK,
RIMS, SPOKES, HUBS, ETC.,
AND HARDWOOD LUMBER.
SEND FOR CATALOGUE AND PRICE LIST.

The Hickory Nut Brand is made of Second Growth Hickory Rims, Spokes and Elm Hubs.
The Acorn Brand is made of Second Growth Oak Spokes, Bent Oak Rims or Sawn Felloes. Thoroughly Seasoned Stock.

FINE CARRIAGE WHEELS.

E. FLICKINGER,
President and Manager.

Capacity 500 Sets per day.

OUR TIRE PLANT ENABLES CARRIAGE AND WAGON MANUFACTURERS TO HAVE THEIR WHEELS TIRED BY EXPERIENCED WORKMEN. CAPACITY OF TIRE DEPARTMENT, 250 SETS PER DAY. CORRESPONDENCE SOLICITED.

THE FLICKINGER WHEEL CO.,
MANUFACTURERS.
GALION, OHIO.

Please mention "The Hub" when you write.

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An Unsolicited TESTIMONIAL.



The Meyercord Co. Worthington, W. Va. May 4 1901 ~~189~~

Gentlemen:

Enclose find check for transfer ornaments. Have been an user of transfer ornaments for 15 or 20 years and have found the "Meyercord" equal to any and excelled by none.

Yours Truly
Chas. E. Parish.

THE above cut is a facsimile of one we received from one of our customers, and is only one of many which we receive daily. It testifies not only to the working qualities of our transfers, but to the up-to-date designs which we are offering as well. We claim the highest perfection for our transfers, no matter whether it is a small stock scroll or special trade mark or name plate.

We guarantee every transfer which we manufacture to be entirely satisfactory.

Our new catalogue "L" is now in press and will be ready for distribution in two weeks. This catalogue will contain many new ideas that will interest carriage and wagon painters as well as manufacturers, and a copy will be mailed free for the asking.

WINDOW SIGNS

Manufacturers who are not familiar with our permanent opalescent window signs as a medium for advertising among their agents, should write us at once for samples and particulars.

THE MEYERCORD CO.,

American Manufacturers,

Guaranteed Decalcomania Transfers.

Permanent Opalescent Window Signs.

OFFICE:
Chamber of Commerce Building,
CHICAGO, ILL.

FACTORY:
CHICAGO, ILL.

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PIONEER BRAND CARRIAGE TOP HARDWARE.

"IMITATION IS SIN CERE ST FLATTERY."

The "genuine," however, has all the attributes of the "imitation" but none of the latter's disadvantages,—such as short counts, "job lots" of raw materials, inferior finish, seconds and thirds indiscriminately packed with firsts to "work them off."

The adoption and continued use by the largest manufacturers of the line of "genuine" goods made under our **"PIONEER BRAND"** speaks eloquently for the economy of use found in them.

They not only "are just as good," "answer the purpose," "do the work," but also "their prices count" and "their dependable quality makes them most satisfactory and economical in the long run."

MEASURE COSTS BY RESULTS.—NOT ALWAYS BY FIGURES.

BOW SOCKETS.
All styles in both japanned and leather covered.

TOP BRACES.
The RIGHT kind; improved double head rivet originated by us, imitated by every other manufacturer.

SHIFTING RAILS.
Electric welded; all varieties of style and detail.

BUCKLE LOOPS.
Seventeen styles and sizes in japanned and leather

CURTAIN LIGHTS
Oval, oblong, square, round. Plain glass or bevel.

PROP NUTS.
Japanned and nickel; plain and imitation stitched; capped and solid head.

CURTAIN STRAPS.
Three styles, all good.

TOP PROPS.
Solid or screw bases. Properly threaded to fit nuts.

WAGON CURTAIN PATCHES.
Best selected leather used. Nothing else satisfactory.

KNOBS.
Styles and sizes too numerous to mention—cast and wrought.

CURTAIN FASTENERS
I. X. L., SNAP, and others; these two the best.

SHAFT TIPS.
Japanned, X. C., nickel, steel and brass; very durable; made from heavy stock.

TUFTING BUTTONS.
Japanned, cloth covered, leather covered, composition, eye and clinch—tacks and nails galore.

LINING NAILS.
Capped and solid head. Packages or bulk. Japanned or bright.

MANY OTHER ARTICLES.
Our catologue tells of them. Keep it at hand for consultation.

MAKERS:

Crandal, Stone & Co., Binghamton, N. Y.

"FOURTEEN YEARS AHEAD"

OUR SPECIALTY IS

FOR USE ON... CARRIAGES, WAGONS and TRUCKS

SPRING BRAKE BLOCKS AND BRAKE ATTACHMENTS

MEET US AT
Dealer's Convention
OCTOBER 15 - 20

Many styles and sizes to meet every requirement. We have proved that for EFFICIENCY, DURABILITY AND ECONOMY that our goods are a long way ahead of the ordinary kind. In 1887 a few sets of these Spring Brake Blocks were attached to business wagons having the most severe and constant use and now after daily use for FOURTEEN YEARS these are giving entire satisfaction.

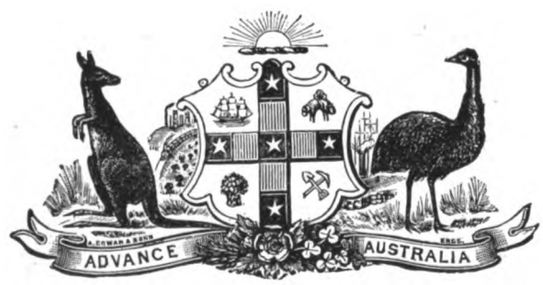
MORGAN POTTER,

FISHKILL-ON-HUDSON
N. Y., U. S. A.

The Australasian Coachbuilder and Wheelwright.

A Monthly Illustrated Technical Journal circulating among Coachbuilders and Wheelwrights of the Australian Commonwealth, New Zealand and South Africa.

The Medium for advertising to Coachbuilders and Wheelwrights in these parts.



Advertising rates and other information furnished on application.

Annual subscription $3.60 in advance, post prepaid to any part of the world.

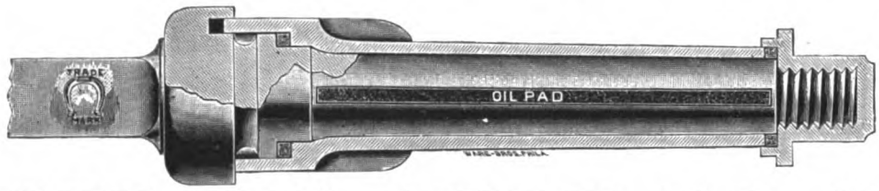
J. E. BISHOP & CO.,

65 Market Street - - - - - - - - - SYDNEY, N. S. W., AUSTRALIA

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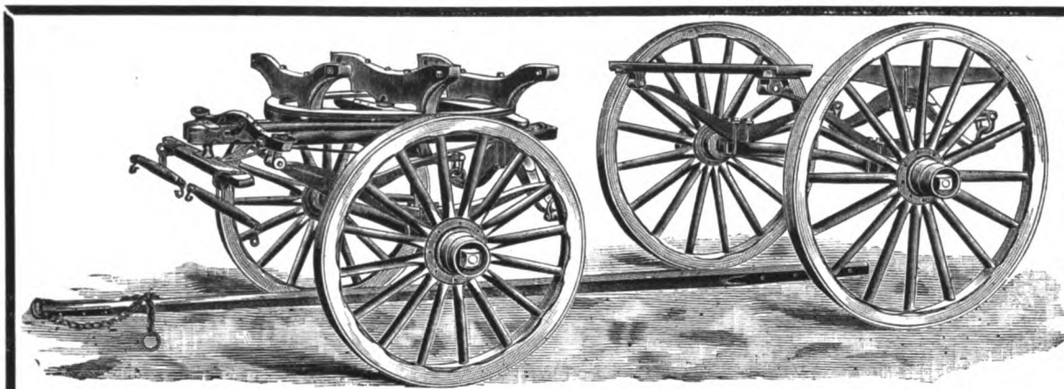
Manufacturers of "Collinge Collar" and other styles of Axles for "Long Distance" use.

Also Manufacturers of the best "Concord Express Axles."





SPEARS AXLE CO., WHEELING, W. VA., U. S. A.



Complete Gears as shown above, ready to receive body, for light and heavy work, can be furnished promptly. In ordering give full specifications, or such description as will enable us to make up specifications. Dealers in wagon materials will quote prices on our gears.

SELLE GEARS

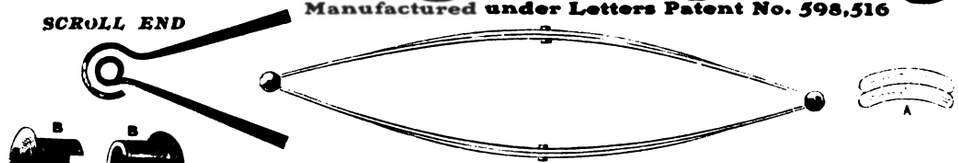
THE SELLE GEAR CO.

AKRON, O.

The PREMIER Bike Wagon Spring

Manufactured under Letters Patent No. 598,516

SCROLL END



Malleable Iron Bushings used Between the Upper and Lower Scroll at Ends.

AN ENTIRELY NEW PRINCIPLE

The Combination of Taper and Graduated thickness of leaves to produce an elasticity that is unexcelled. The latest in Springs. Fully Guaranteed. Made in Six sizes.

THOUSANDS IN USE

Write for full description and Price List. Address

The HESS SPRING & AXLE Co.

CARTHAGE, O.

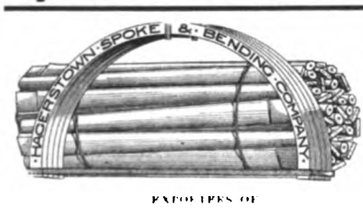
G. W. SEBOLD, Pres't. J. H. BEACHLEY, Vice-Pres't. F. S. BARRICK, Sec'y. S. A. MUNN, Treas. A. S. HARING, Supt.

The Hagerstown Spoke and Bending Co.

Hagerstown, Maryland. U. S. A.

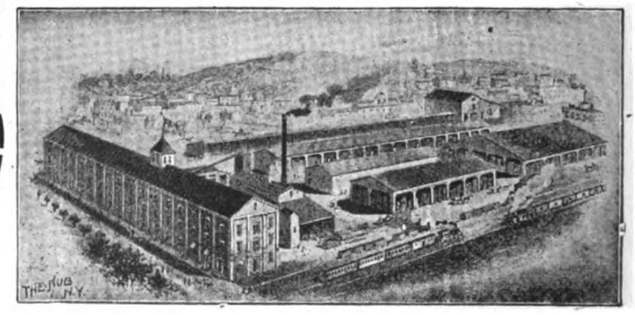
MANUFACTURERS OF

Spokes and Rims



The celebrated "Horseshoe" brand of which we export largely. All Foreign and American patterns of Spokes.

TRADE MARK



EXPORTERS OF

Hardwood, Oak, Hickory and Walnut Logs and Lumber.

Correspondence Solicited. Cable Address, "SEBOLD."

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EVERY SET GUARANTEED AS REPRESENTED.

Automobile Wheels

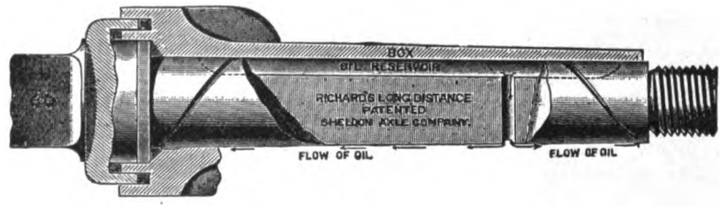
ARCHIBALD WHEELS,
SARVEN WHEELS,
WARNER WHEELS,
CARRIAGE WHEELS.

Our wheels are better made and finer finished than any others sold to the trade.

New Haven Carriage Co.,

NEW HAVEN, CONN.

SHELDON AXLE CO.



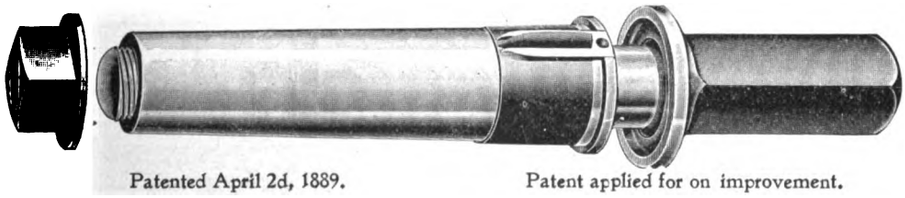
They are now prepared to furnish BIKE WAGON AXLES in any quantity, promptly, ready for welding to fifth wheels and centres. ... The RICHARDS "LONG DISTANCE" (the only long distance axle made) still leads. There are many cheap imitations on the market, but only one real thing.....

SHELDON AXLE CO., Wilkes-Barre, Pa.

Not only CLAIM to make the best Axles and Springs made in the world, in each of their grades, but DO SO.

Collinge Collar Express Axles

WITH COMPOSITION METAL WASHERS.



Patented April 2d, 1889. Patent applied for on improvement.

Designed for Express Wagons, Milk, Laundry, Delivery Work, Fire Chief, Ambulance, Apparatus, and all classes of work requiring extra strong, protected and durable Axles.

All kinds Axles Springs Tires, Wheels Etc., Etc.

W. F. BLACK,
401 Electric Building,
CLEVELAND, OHIO.

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Samples of our Electrotypes

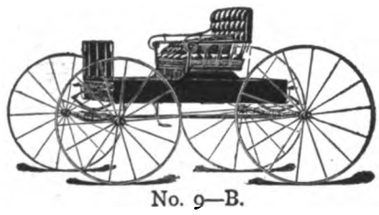
FOR ADVERTISING PURPOSES.

FINE CUTS

....AND....

Catalogue Work

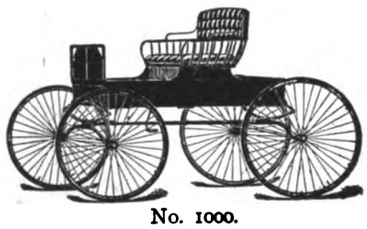
OUR SPECIALTIES.



No. 9—B.



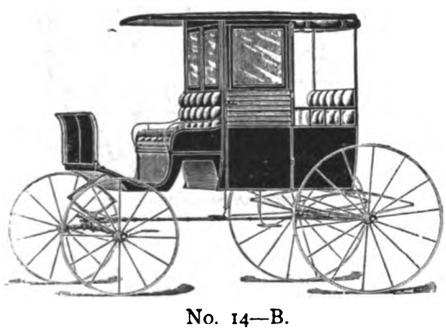
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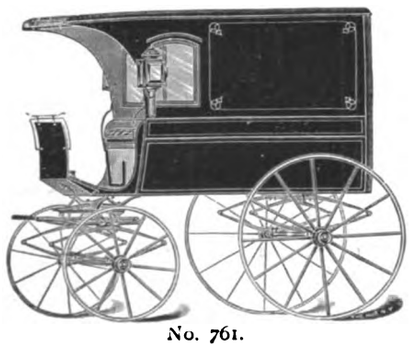
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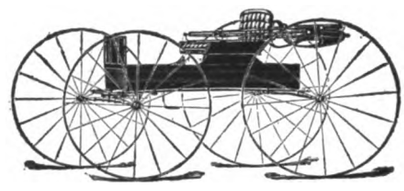
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No. 2—B.



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Only 75 Cents Each.

Do not forget

that the quality of your work is often misrepresented by using POOR CUTS, and that when you need them we can always supply you with the very finest.

Only 75 Cents Each.



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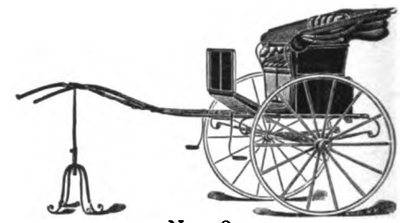
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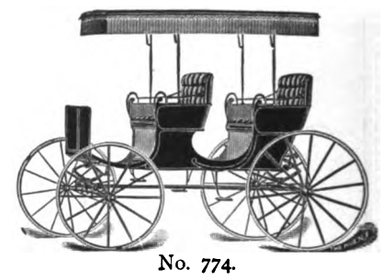
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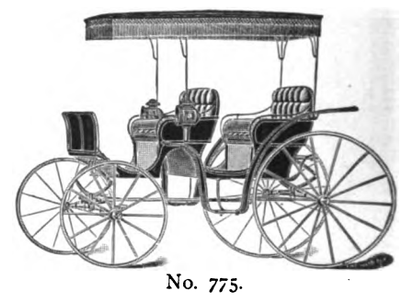
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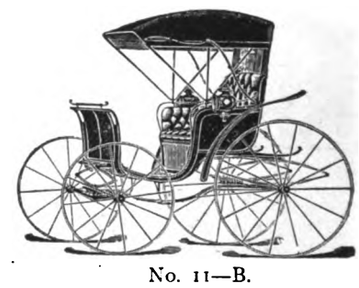
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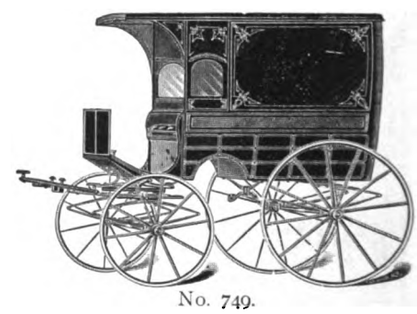
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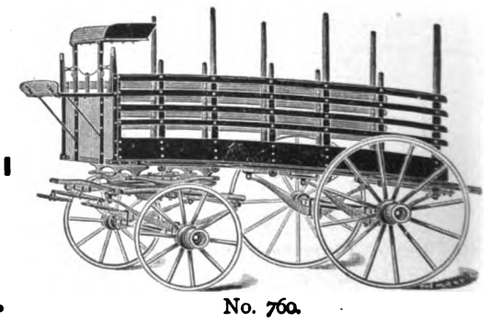
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THE OLD RELIABLE

THE

J.A.&D.P. COOPER CO.

We are furnishing our Ironed Up Sets better and at lower prices than you can assemble the parts and put them up yourself.

We have greatly increased our factory facilities and are giving prompt service.

We are recognized leaders and the only practical carriage makers in the gearwood trade.

We furnish all styles of gearwoods made to order.

THE
J. A. & D. P. COOPER CO.
STRUTHERS, OHIO



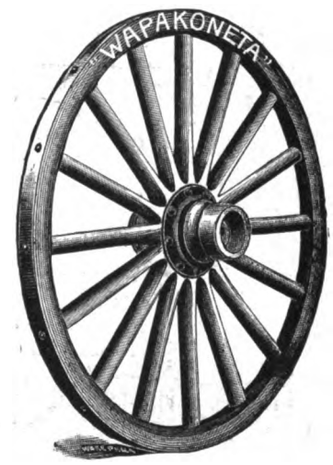
Trade-Mark.

WHEELS LIGHT AND HEAVY.

Sarven, Compressed and Wood Hub

Capacity 250 Sets Per Day.

Highest Award at World's Fair



FOR SUPERIORITY IN CONSTRUCTION, WORKMANSHIP AND MATERIAL.

THE WAPAKONETA WHEEL COMPANY,
WAPAKONETA, OHIO.

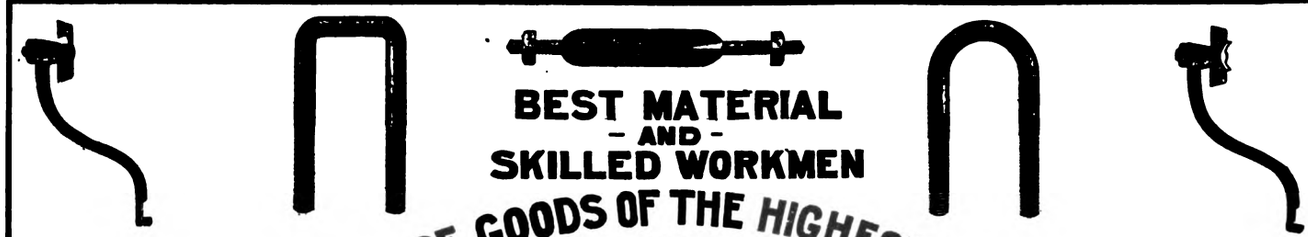
IVORETTES

The latest and most satisfactory style of cuts. Manufacturers who have adopted our *IVORETTES* claim that they are enabled to give a better representation and bring out more prominently the striking and desirable features of their work. *See* THE HUB'S *Fashion Plates for samples.* TRADE NEWS PUB. CO.
No. 24 Murray St., New York

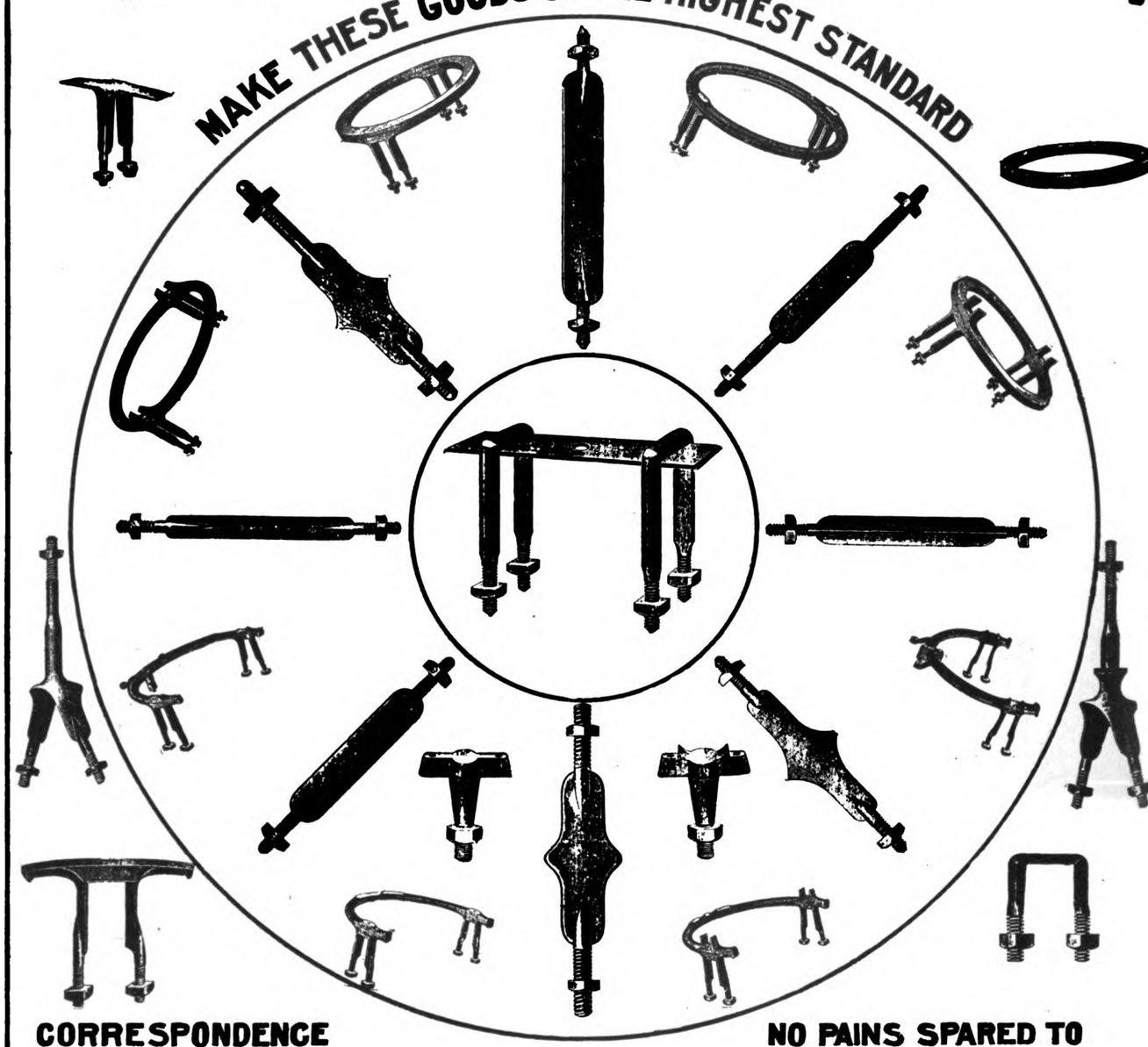
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ONLY-A-FEW-OF-OUR-MAKE

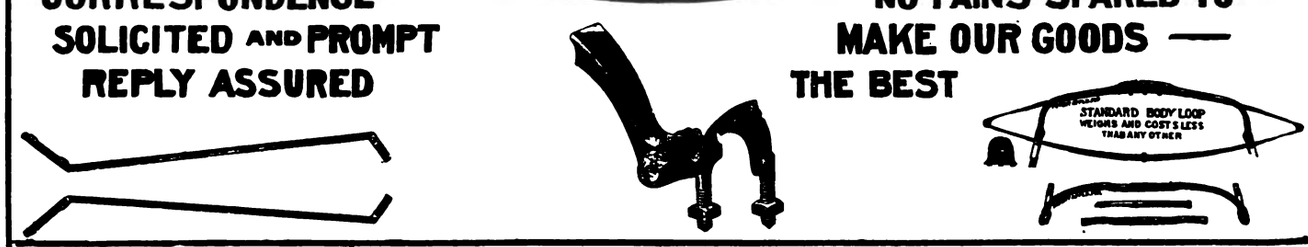


BEST MATERIAL
- AND -
SKILLED WORKMEN
MAKE THESE GOODS OF THE HIGHEST STANDARD



CORRESPONDENCE SOLICITED AND PROMPT REPLY ASSURED

NO PAINS SPARED TO MAKE OUR GOODS — THE BEST



CATALOGUE AND PRICES TO BE HAD FOR THE ASKING

THE KEYSTONE FORGING CO.
NORTHUMBERLAND, PA, U.S.A.

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COMPARE

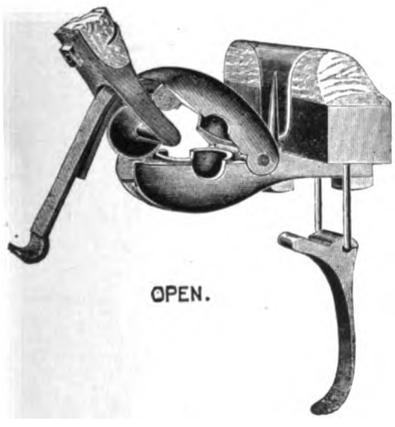
The Mulholland Shaft Coupler..

with any other Coupler on the market, and we are confident you will concede its superiority.

It is correct in principle, and has no equal for strength, workmanship and neatness in appearance.

We ask you to make the comparison and judge for yourself.

The Mulholland Coupler,



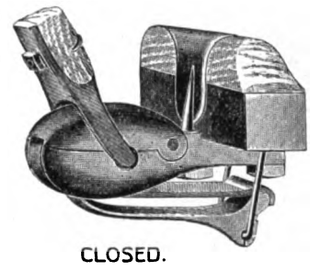
OPEN.

has the following features which are possessed by no other SHAFT COUPLER.

IT IS DIRT PROOF.

The Jaws Interlock.

The Leather Bushings are Permanently Cemented in the Jaws.



CLOSED.

The Link is made of Steel Wire, the Ends being Electrically Welded.

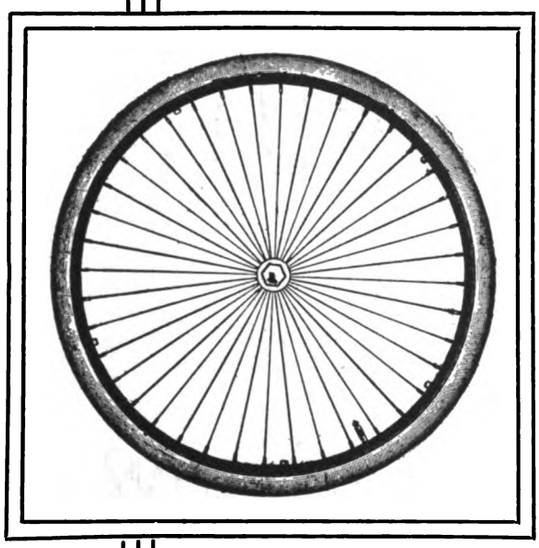
Write us, and we will tell you other reasons why you should use the Mulholland Shaft Coupler.

Mulholland Spring Co.,

DUNKIRK, N. Y.

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"Built for Business"



A Pneumatic Buggy with the simplest B. B. adjustment possible--it's fool proof.

A Pneumatic made on correct lines.

A Pneumatic at once full of new ideas and selling points.

A Pneumatic with a wire wheel fitted with a bronze hub.

A Pneumatic with exclusive detail and appointments.

A Pneumatic that's right, and sold direct to the trade, either in the white or finished in the very highest manner.

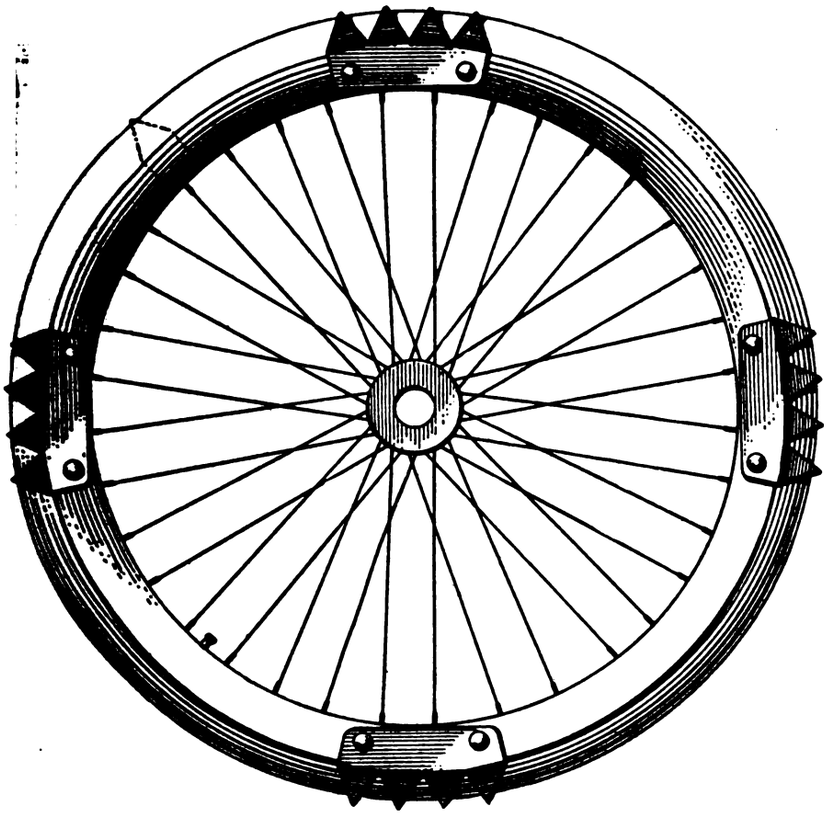
Make your inquiries; we will tell you what you want to know.

The Lashaway Carriage and Wheel Co.

E. F. BUNKER, Mgr.

EAST BROOKFIELD, MASS.

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See Those Teeth?

The Gripping Members on the Rim of the Wheel

Prevent Slipping on Mud, Ice or Snow

They are easily and quickly removed when summer comes.
They will save the price of a tire in preventing it from tearing loose.
They can run on ice on a 60 per cent. grade.
They are the ONLY device that SUCCESSFULLY SOLVES THE SLIPPING PROBLEM.

CAULFIELD'S
PATENT GRIP WHEEL
FOR AUTOMOBILES

U. S. A. Patent No. 670,664 *Canadian Patent No. 71,089*

Particulars on Application to **JOHN CAULFIELD,**

74 Nelson Street **BROOKLYN, N. Y.**

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THE TRIAD SPRING

MANUFACTURED BY

THE TUTHILL SPRING CO.,

CHICAGO, ILL.

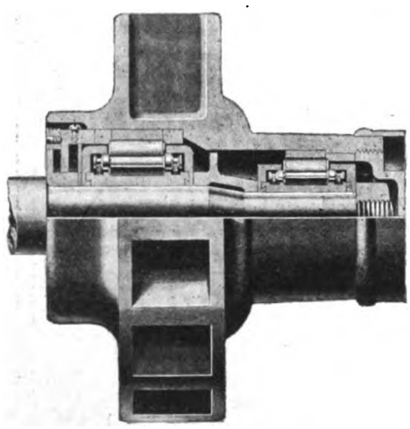
is superior to any other triple elliptic Spring yet produced.

1st. The shape of the spring permits it to work freely and in unison, and even when forced to its fullest capacity.

2nd. The upper and lower spring will pass each other and become a straight line without buckling or breaking away.

3rd. There is no wear on bolts, and the couplings are so constructed as to form a perfect cover for the spring ends.

4th. When painted the triad spring will show no broken paint joints in operation. Give it a trial.



American Roller Bearing Co.,

OFFICES AND FACTORY:

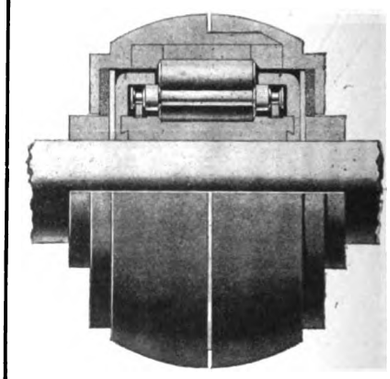
32 Binford Street, Boston, Mass.

Hubs, Wheels and Axles for all kinds of Carriage, Automobile, Wagon and Heavy Truck work.

Also single bearings for Shafting, Motors, Sheaves, Car Bearings, Automobile, Driving Axles, etc.

EUROPEAN BRANCH:
17 Soho Square,
LONDON, ENGLAND.

WESTERN DEPT.,
H. Franklin Peterson,
164 Lake Street,
CHICAGO, - - - ILL.



Redding's Harness and Saddlery Directory

SEVENTH YEAR.

REDDING'S HARNESS AND SADDLERY DIRECTORY FOR 1901 contains some new and valuable features and is an up-to-date twentieth century publication. This directory has **always** been the **standard,** and every edition has been an advance in accuracy and usefulness over the preceding issue.

The 1901 edition has **a new arrangement** of the **wholesale** and **jobbing trade** that makes it very convenient for those who wish to separate *association jobbers* from those not at present so recognized.

A new part has been added that will be found a very serviceable list of **dealers in harness,** as distinguished from *retail harness* manufacturers. To many who solicit the vehicle, implement and hardware trade, as well as department stores, this will prove of great convenience. These trades are handling harness and horse goods in increasing volume yearly, and such a list is a distinct advantage to the trade.

The Buyer's Guide (Part III. of the Directory) has always been a valuable feature. This is an alphabetical classification of all the many and various articles made to sell to the trade from Axle Grease, under "A," down to and including Wool Saddle Linings under "W," and the names and addresses of those making the various articles.

As the export trade is now inviting attention, a list of exporters of saddlery is also published.

The body and the bulk of the Directory is, of course, made up of **the retail harness makers of the country.** They are conveniently arranged under State, Town and County, in the larger cities giving the street number of the occupant's place of business. Those whose rating (approximate) is over $1,000, are marked so as to be easily distinguished.

The 1901 edition is nearly exhausted, and those desiring copies should send $2.00 at once to

Trade News Publishing Company.

24-26 MURRAY STREET, NEW YORK.

Please mention "The Hub" when you write.

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Spaces 76-77, Automobile Show, Madison Square Garden, New York, Nov. 2d to 9th.

Shelby Seamless Steel Tubing

HAS NO EQUAL FOR

Automobile Frame Construction

Shelby Automobile Boiler Tubes

MEET EVERY REQUIREMENT AND REPRESENT THE STANDARD OF EXCELLENCE IN AUTOMOBILE BOILER TUBING.

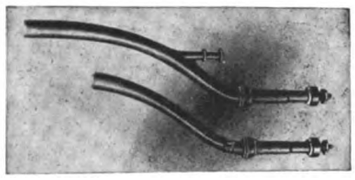
Shelby Tubing is the recognized standard for Automobile Construction; loss in manufacture will be reduced to a minimum and stability of product secured by the use of SHELBY SEAMLESS STEEL TUBING, the quality of which is unquestioned.

Shelby Steel Tube Company

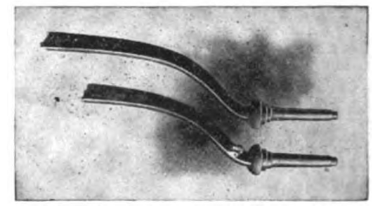
Empire Bldg., Pittsburgh, Pa.

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HERE THEY ARE !!!

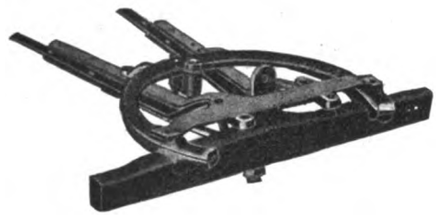


Little comment necessary.
Just write us about them.



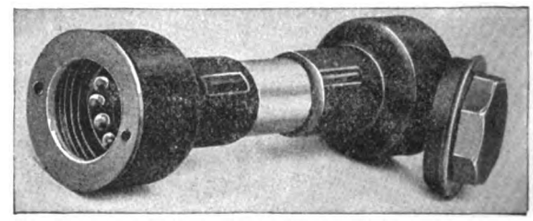
WE MAKE

Automobile Running Gears
Wire Wheels, Engines, Boilers, Etc.



Brewster Skeleton Five-Inch Wheel.

Special Catalog Tells the Tale



Telescopic Ball-Bearing Bushing for wood wheels. Fits Anything.

NEUSTADT-PERRY CO. ST. LOUIS, MO.

FLORIDA

BY THE

Clyde Line

THE ONLY DIRECT ALL-WATER ROUTE BETWEEN

NEW YORK
BOSTON
and
Charleston, S.C.
Jacksonville, Fla.

St. Johns River Service between Jacksonville and Sanford, Fla., and intermediate landings.

FAST MODERN STEAMSHIPS AND FINEST SERVICE

WM. P. CLYDE & CO., *Gen'l Agents*
THEO. G. EGER, *G. M.*
19 STATE ST., NEW YORK

BOSTON ROLLER CHAFE IRONS ARE THE BEST

Any old thing might be called a Roller Chafe Iron. There is but one scientifically and mechanically correct;

THE BOSTON

BOSTON ROLLER CHAFE IRON CO.
178 DEVONSHIRE ST. BOSTON, MASS.

LEADERS IN SWIVEL NECK YOKES



MANUFACTURED BY

C. E. SOVEREIGN,
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Do you Know About Bailey's



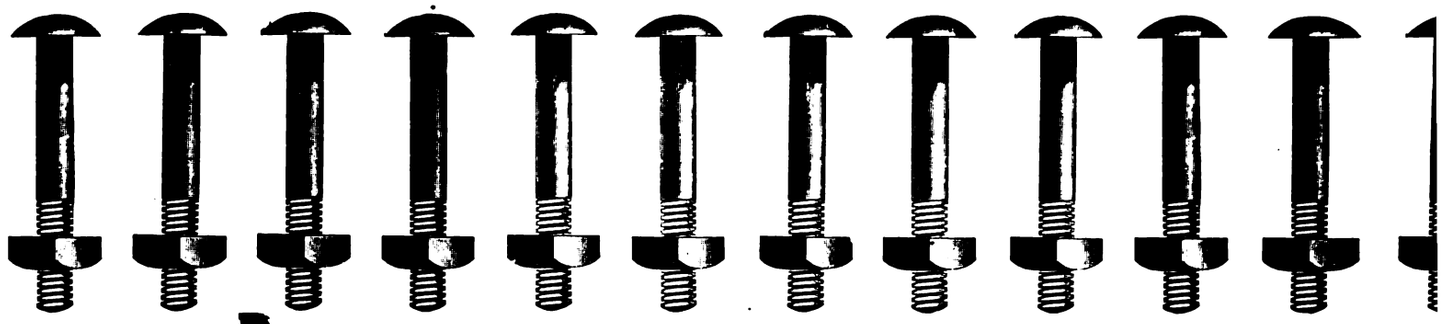
Bull-Dog Shaft Eyes

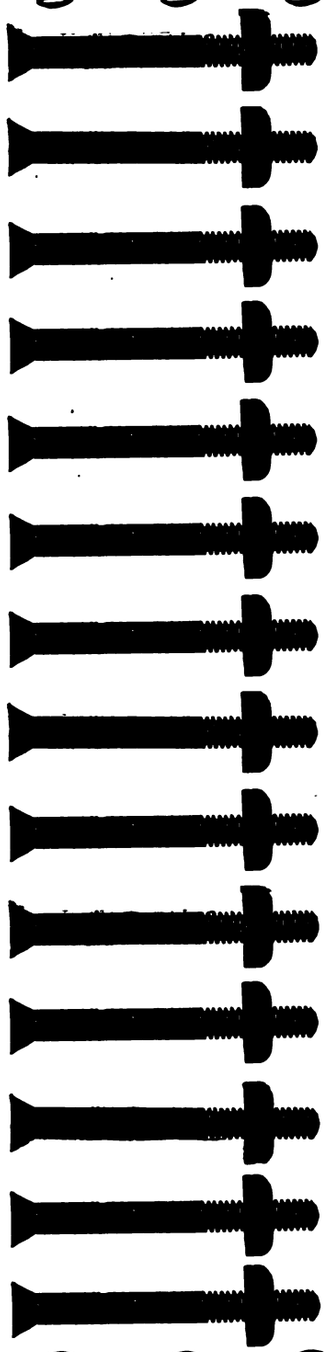
There are many substantial reasons why they should be used. These reasons are all explained in a circular which we shall be glad to send upon request.

S. R. Bailey & Company

Amesbury, Massachusetts, U. S. A.

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We claim First place as Manufacturers of Small Bolts!

WATCH US GROW!!!

OUR MOTTO IS

"QUALITY SERVICE

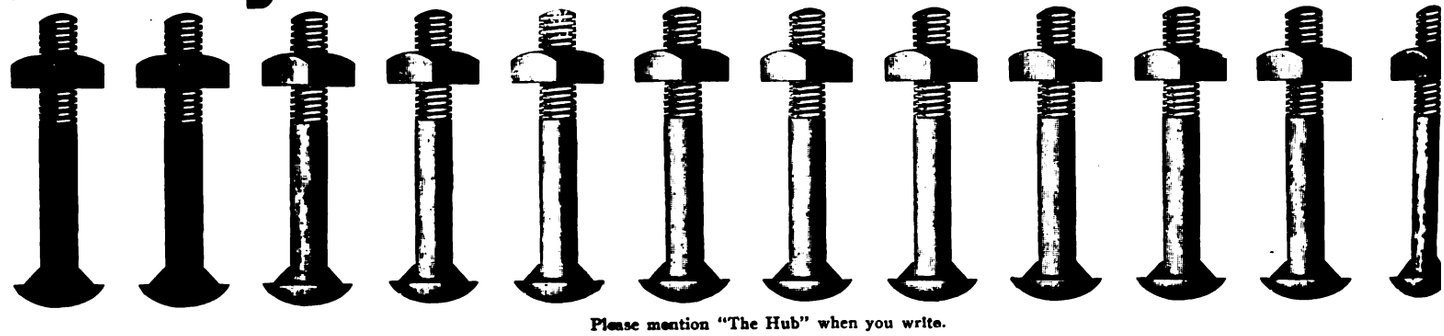
.... AND ....

Fair Dealing With All."

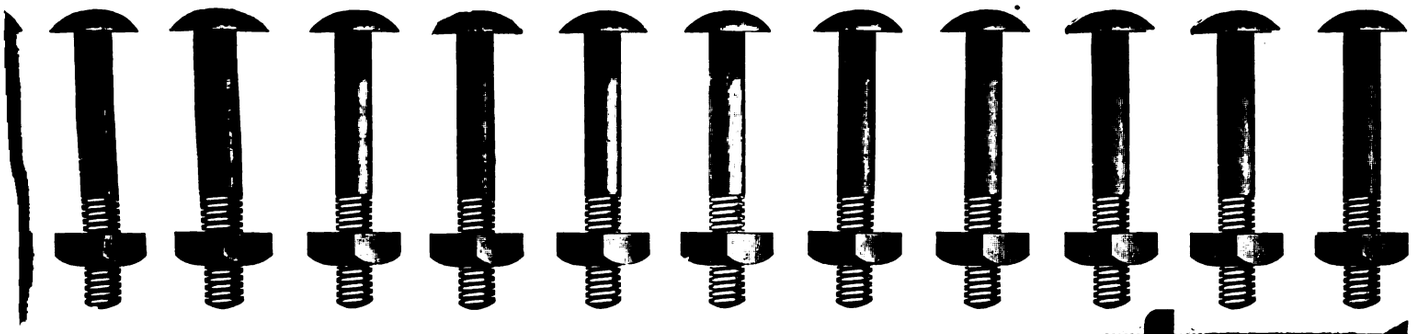
WE MAKE THE PERSONAL ACQUAINTANCE OF OUR CUSTOMERS AND FAMILIARIZE OURSELVES WITH THEIR REQUIREMENTS.

The Kirk-Latty Mfg. Co.

Cleveland, Ohio.



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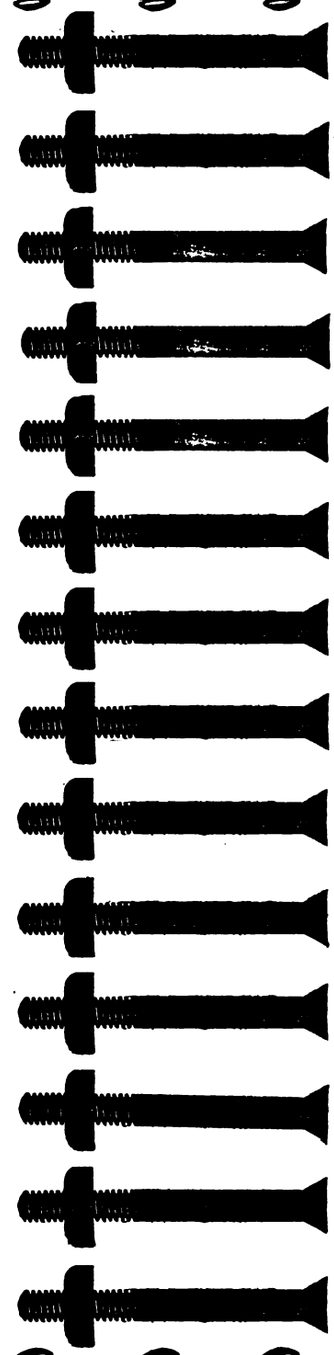
WE MAKE....

The Celebrated "Cleveland" Tire Bolt, : : :

The Celebrated "Cleveland" Carriage Bolt,

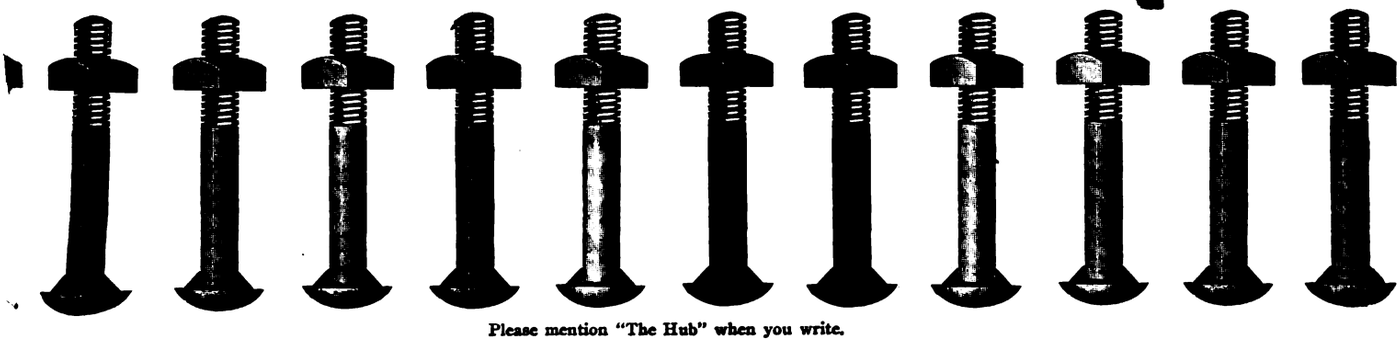
A Fin Head Bolt of Superior Quality. : : : :

These are the Bolt makers of Cleveland Town,
Whose Bolts are known for miles around.
The quality of their Bolts, ha! ha!
Attracts attention from afar,
And their success it goes to show,
It pays to make good Bolts you know.



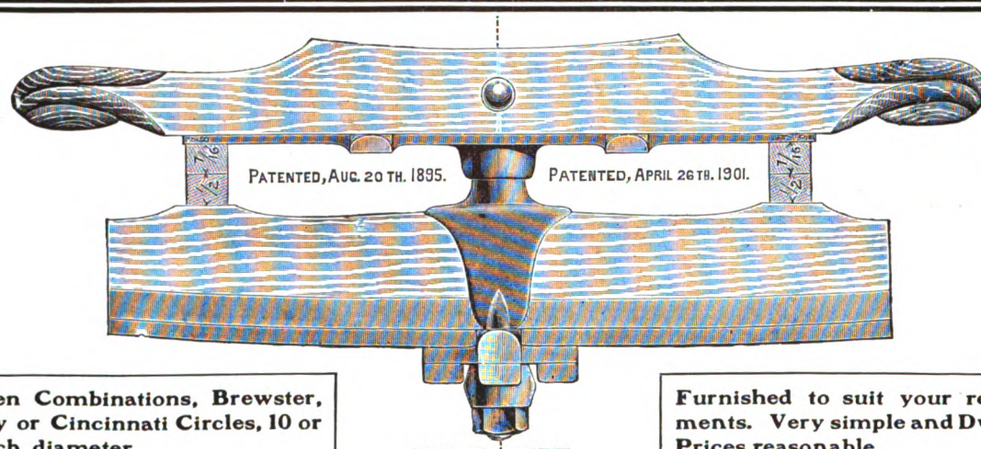
The Kirk-Latty Mfg. Co.

Cleveland, Ohio.



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OVR IMPROVED 1901
REAR CLIP KING BOLT GEAR SETS



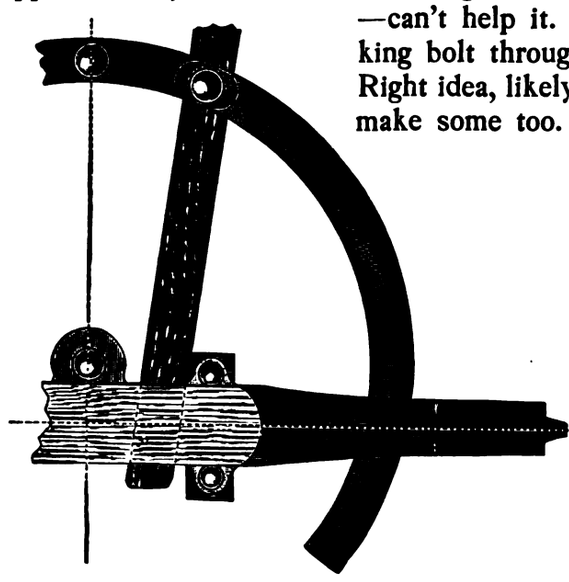
Sixteen Combinations, Brewster, Derby or Cincinnati Circles, 10 or 12-inch diameter.

FRONT VIEW

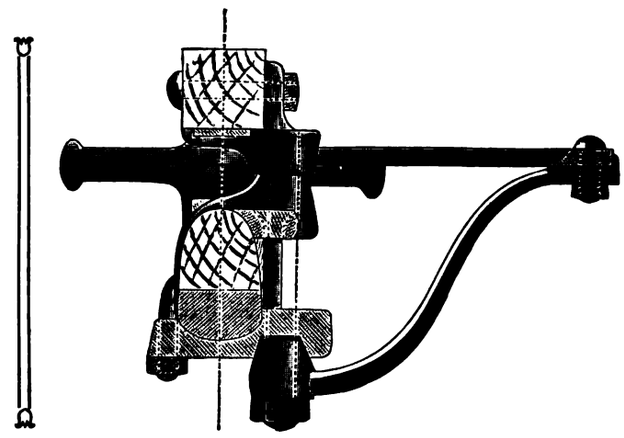
Furnished to suit your requirements. Very simple and Durable. Prices reasonable.

FOR BUGGIES AND SURREYS

We are getting in touch with the trade more every day. Just look at that front view appearance—just the same as a regular king bolt. Like that? Manufacturers see the point—can't help it. It appeals to them. Just notice—there is no king bolt through the head block or spring to break the paint. Right idea, likely to save a lot of money. Give us a chance to make some too. Another good idea.



TOP VIEW



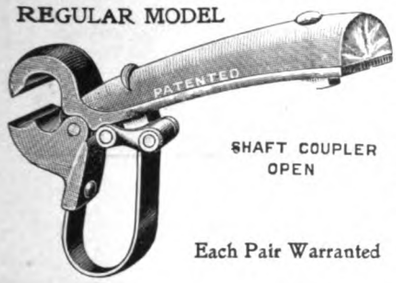
CROSS SECTION

Just try one sample. You will be convinced we have something fine. A fine "Working Chart" for you to get your gears made to, sent by mail just for the asking. Correspondence solicited.

THE D. WILCOX MANUF'G CO.
MECHANICSBURG, PA.

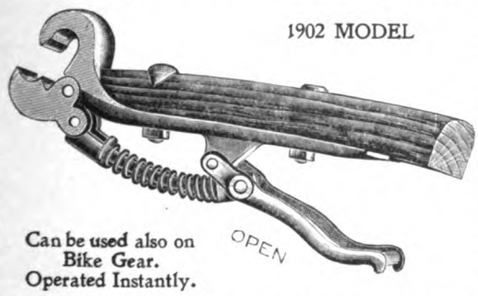
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REGULAR MODEL



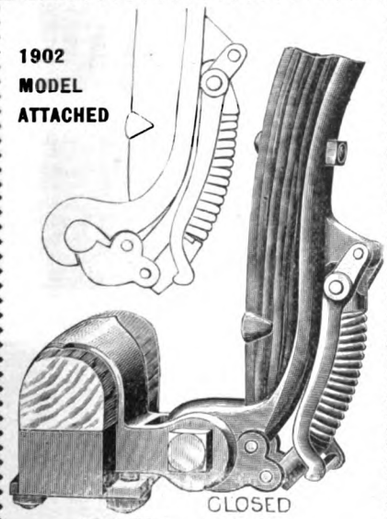
Each Pair Warranted

1902 MODEL



Can be used also on Bike Gear. Operated Instantly.

1902 MODEL ATTACHED



With Unbreakable Spring

The Carriage Trade has Pronounced the

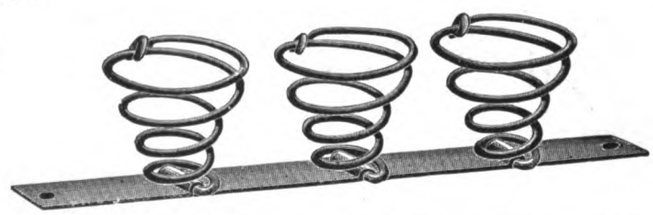
Standard Coupler

The ONLY SATISFACTORY COUPLER on the market . . . . .

The MERITS of this Coupler and not UNLIMITED ADVERTISING have established its trade. . . . . .

Some of the Reasons Why: BECAUSE IT IS INTERCHANGEABLE. Any pole or shafts fitted with it will fit any vehicle in the repository. USED WITH REGULAR SHAFT SHACKLE. FITS ANY SIZE BOLT PERFECTLY. Takes up any wear automatically. CANNOT BECOME DETACHED WHILE DRIVING, as points of shafts must be on ground before shafts can be detached. NO LOOSE BUSHINGS to get lost or wear out. Its vise-like grasp of bolt prevents all rattle or squeak. IT CANNOT SIDE RATTLE. IF YOU TRY A SAMPLE PAIR YOU WILL NEVER USE ANY OTHER.

Our New Spring Cushion



Furnished exactly as shown in illustration, all ready for attaching to wood frame.

Is cheaper and applied with less labor than any similar device. TRY THEM.

TRY OUR WIRE BOOT STRAPS

Have Replaced Rubber Entirely.  **We GUARANTEE them not to set.**

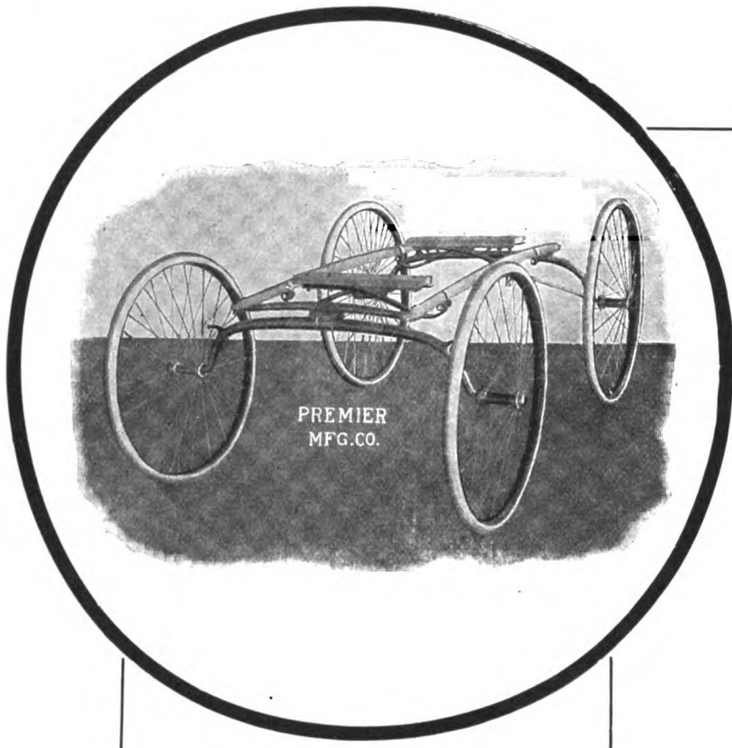
Will show above and many new devices at the Tri-State Dealers' Exhibit in Cincinnati. Send for our new catalogue containing over 500 separate articles made by us for the carriage and wagon trade.

METAL STAMPING CO.

468-472 West Broadway
NEW YORK

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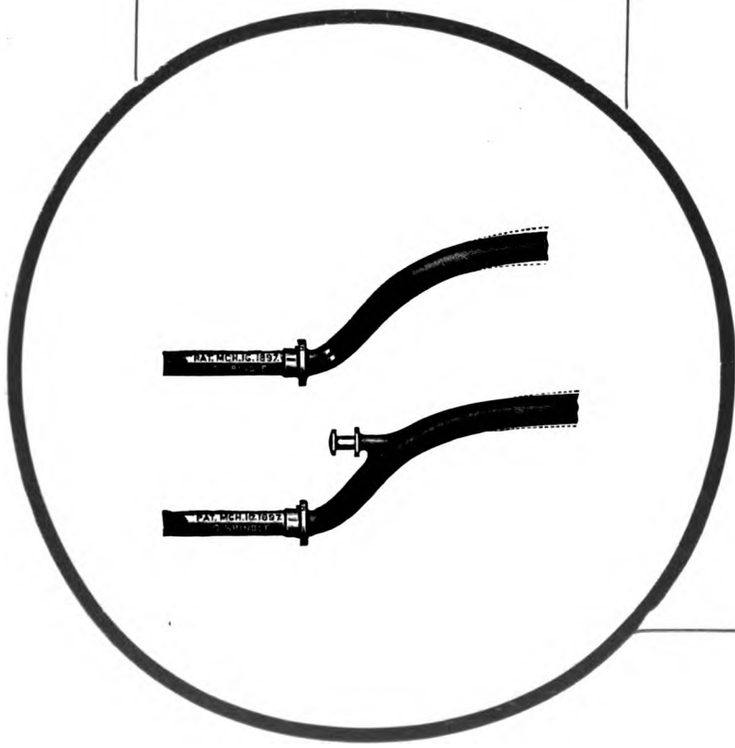


1902

PREMIER

The Greatest Genius in Mechanical Art has made the PREMIER Perfect.
A larger line than ever.
Let us send you samples.

Wire Wheels
Ball Bearing Axles
Bushings (For Wood Wheels)
Gears
Forging Axles, Etc.



PREMIER MFG. CO.

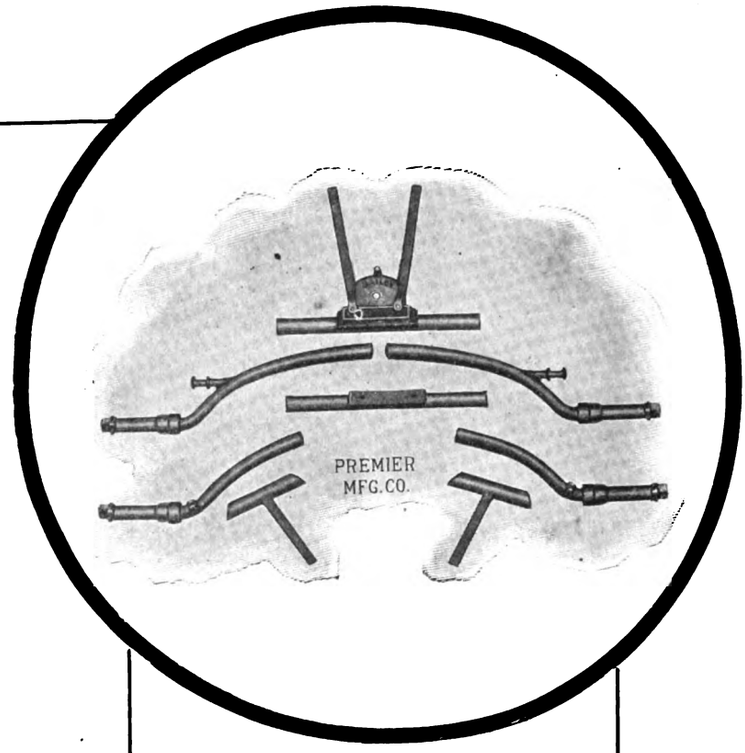
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1902

PREMIER

We hold patents on axle forgings with shaft and brace lug design as shown in cuts below (also three other designs) and have licensed the parties named herewith to make and sell them. Infringers will be prosecuted.



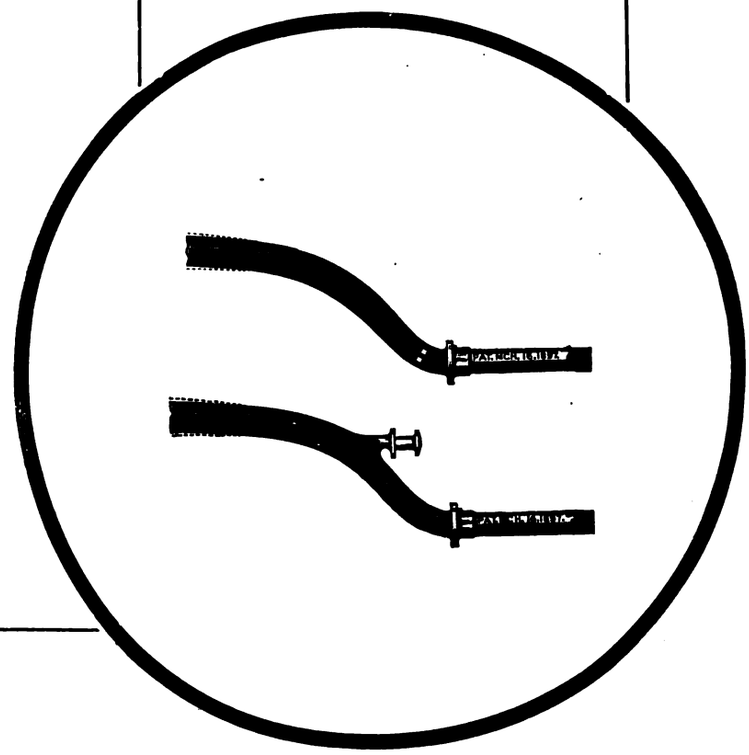
LICENSEES:

The Sheldon Axle Co.,
Wilkesbarre, Pa.

The Wilcox Mfg. Co.,
Mechanicsburg, Pa.

The Billings & Spencer Co., Hartford, Conn.

The Premier Mfg. Co.,
Hartford, Conn.



PREMIER MFG. CO.

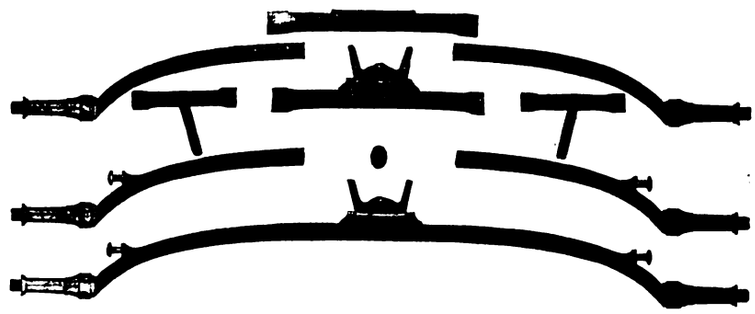
HARTFORD, CONN.

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New Designs & Bet

OVAL HIGH ARCH, TRUE SWEEP

BIKE WAGON AXLES AND FORGINGS



Got the Metal Where It's Needed
Arch From the Collar
Not a Break
NOT A FLAT PLACE---A TRUE TRUSS

BALL-BEARING OR LONG DISTANCE WIRE WHEELS

For Cushion or Pneumatic Tires to Fit.

Weston-Mott Com

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r Goods Than Ever

BIKE WAGON AXLES AND FORGINGS

ROUND OR SWAGED

BUGGY OR SURREY WEIGHT

BALL-BEARING OR LONG DISTANCE

Wire Wheels

Steel Rims

New Flat Base Channel for 1¼ Inch and 1⅛ Inch Cushion Tires

Before Placing Your 1902 Orders See Our Line

ny, Utica, New York

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WITH ONE HAND



WITH ONE HAND

You can open the way to profits you are not making now.
With one eye your customers can see that **Bradley Shaft Couplings** on a vehicle make it safer, better and cheaper.
It's easy to sell vehicles with

THE BRADLEY SHAFT COUPLING

It's easy to get nice profits out of the selling opportunities they open to you.
There are other good points we are waiting to tell you.
Look for us at the Tri-State Dealers' Convention at Cincinnati in November.

C. C. Bradley & Son, Syracuse, N. Y.

TRADE PAPER ADV. AGENCY, N.Y. — 50

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AXLES

Cleveland Axle Mfg. Co.

CANTON, OHIO,
U. S. A.

Well Made

Good Material

SPRINGS

Hand Fitted

Oil Tempered

....The
Cleveland-Canton Spring Co.

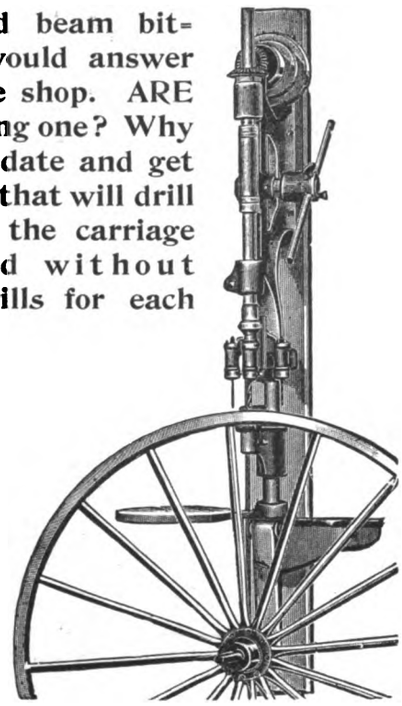
CANTON, OHIO,
U. S. A.

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There Was a Time

when an old beam bit-stock drill would answer for a carriage shop. ARE YOU still using one? Why not be up to date and get a turret drill that will drill any hole on the carriage quickly, and without changing drills for each side hole.

Especially Adapted For Tires.



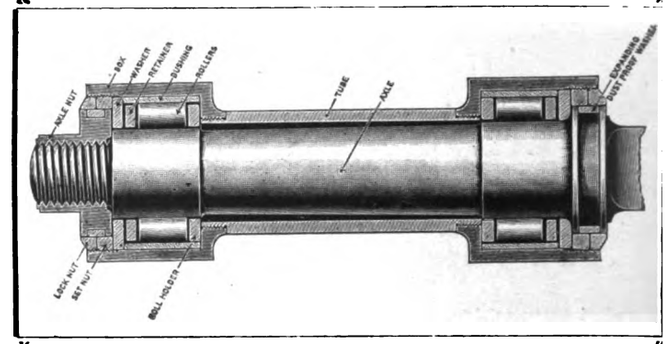
THE GEORGE BURNHAM CO.,

21 Hermon Street, WORCESTER, MASS.

STRENGTH DURABILITY and SIMPLICITY

are distinctive features of the.....

MORSE ROLLER BEARING AXLE.

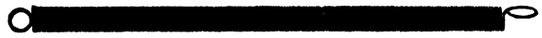


The Morse Roller Bearing Fifth Wheel will interest you, too.

Write for circulars and price list.

THE BANTAM MFG. CO.

BANTAM, CONN.



BUGGY BOOT SPRINGS.

Better and Cheaper than Rubber.
The Largest Builders Use Them.

Get Samples and Prices.

RAYMOND MFG. CO., LMT.
CORRY, PA.

MANUFACTURERS OF

Brake and Pole Springs, Anti-Rattlers, Axle Washers,

WIRE SPECIALTIES.



IMPROVED POLE SPRING.

Are You Keeping Up with the Procession?



Are you keeping posted on the development of the automobile?

A book upon the subject has just been published. It is called "*The Construction of a Gasolene Motor Vehicle*" and is an interesting and practical work. The book is by Clarence C. Bramwell and is the result of six years of study, observation and experimental work both in this country and abroad.

It is profusely illustrated with mechanically correct drawings, working from which any mechanic or amateur builder can construct an automobile.

"*The Construction of a Gasolene Motor Vehicle*" is alike valuable to manufacturer, dealer or owner of an auto. Reading it may save many expensive mistakes otherwise likely to occur.

The Price is $2, prepaid

Address THE HUB, 24 Murray St., N.Y.

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Helps Secure Situations.

Carriage, Harness and Accessory Traveling Salesmen's Association

OF THE UNITED STATES.

All Commercial Travelers in Above Lines Eligible. No Others. Pays Death Benefits.

Membership Fee,	**$3.00**
Annual Dues,	**1.00**

Employers of Traveling Men eligible to join as associate members on payment of $5.00, and are exempt from all further dues.

Manufacturers of carriages, harness or goods that enter into their construction, jobbers of same, can secure good, reliable and efficient salesmen through our Association, as the members of this Association have the best facilities for knowing all about men who are seeking situations, and none will be recommended unless they are first class and worthy of support.

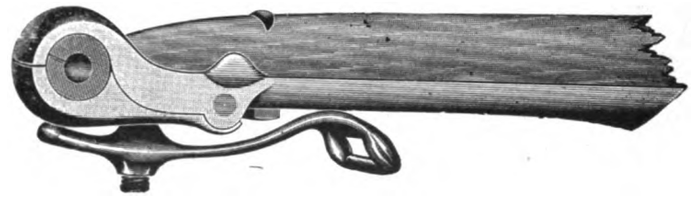
Salesmen in need of a situation, or manufacturers in need of a salesman, address for further information,

P. D. RANDALL, Secretary.

Board of Trade, Springfield, Mass.

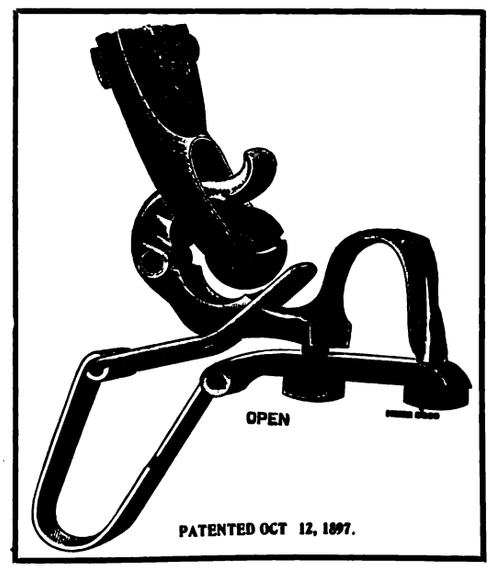
Eccles Adjustable Shaft Eye.

PATENTED AUGUST 28th, 1900.



Ball Bearing Shaft Coupling.

SEND FOR DESCRIPTIVE CIRCULARS AND PRICES.



ALSO GET OUR CATALOG SHOWING FULL LINE OF

Carriage Forgings.

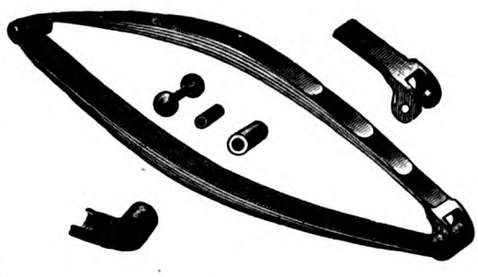
RICHARD ECCLES,

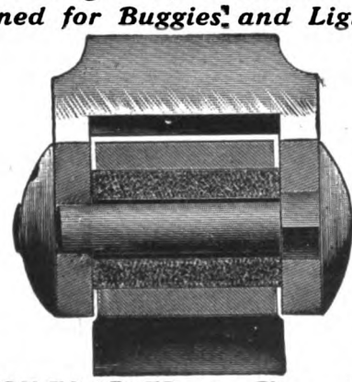
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Elliptic and Coach Platform Springs

WITH RUBBER OPEN-HEADS.

LARGE SIZE.—Designed for Broughams, Landaus and Coaches.
SMALL SIZE.—Designed for Buggies and Light Carriages.





The Rubber Open-Head SPRINGS

Work Freely Without Friction.

No Binding or Squeaking in the Heads or Eyes.

SPRINGS OF EVERY STYLE AND PATTERN TO ORDER,
ALSO CURTAIN ROLLERS AND CONCEALED HINGES.
Exclusively First-Class Work.—The Best that Can be Made.

Spring Perch Co.,
BRIDGEPORT, CONN.

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Fernald Quick Shifter and Anti-Rattlers.



Burton's Anti-Rattler & Bolt Holder No. 1.

PAT. NOVEMBER 15, 1887.

Trade Mark "Burton" Registered Oct. 5, 1897.

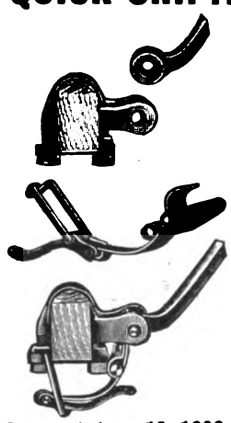
Burton's Anti-Rattlers are noiseless, easily inserted or taken out with a hammer without removing bolt, will not lose out, are made from the best steel, thoroughly tested, and will not break. Guaranteed to retain their strength. Where the No. 1 is used bolt cannot lose out.

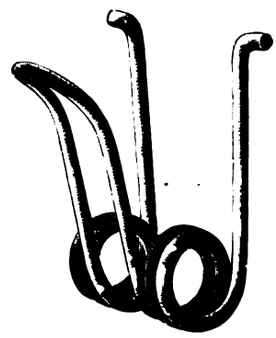




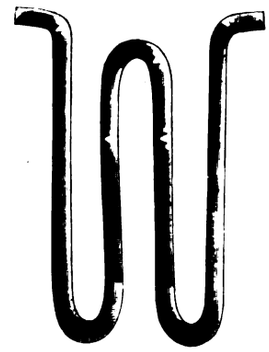
..IMPROVED..

FERNALD QUICK SHIFT.



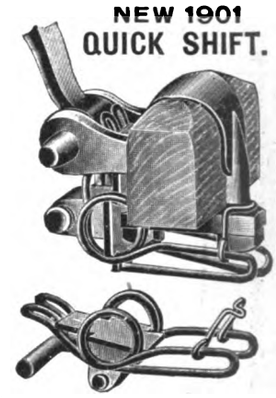


GEM WIRE No. 1.



TEMPERED WIRE DRIVE.

NEW 1901
QUICK SHIFT.



Patent Applied For.

Patented June 13, 1899.
Canada, July 17, 1899.

FERNALD MFG. CO., North East, Pa., U. S. A.

Repair Shops, Take Notice.

THE HENDERSON HAND POWER TIRE SETTER IS A MONEY-MAKER.

Worth $500 (only cost $150).



900 Tires Per Month—Best Investment Ever Made.

DALLAS CITY, ILL., August 8, 1901.

This is to certify that on or about July 1st we purchased a Henderson Tire Setter, and up to date, or about one month, we have set 900 tires. We consider it the greatest money maker, and the best investment we ever made. It brings us trade in this line that we otherwise would not get if we did not have it. It does all and more than you claim for it. No up-to-date shop should be without a Henderson Tire Setter.

Yours respectfully, WALTER BROS.

WRITE TO THE

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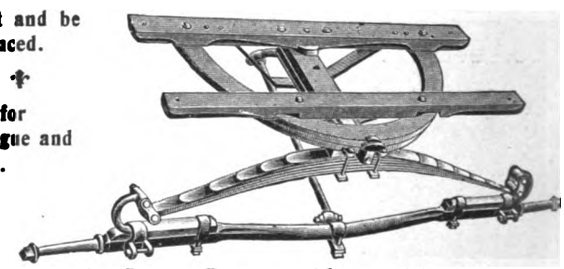
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For all kinds of Delivery Wagons. Manufactured in one grade only—

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These are by far the BEST and CHEAPEST Roller Bearing Fifth Wheels on the Market for all kinds of Vehicles.

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No. 606,635, June 28th, 1898.
No. 606,636, June 28th, 1898.
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Patents in other Foreign Countries Pending.



Columbus O. May 28th, 1901.

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Gentlemen:- We are pleased to say that the Timken Roller Bearing Axles have proven a great success wherever we have used them.

One particular vehicle that we put them on, a large six-passenger carriage, we shipped to a customer in Chicago. He uses but one horse pulling this large carriage with from six to nine people in it. We mail you under separate cover a photograph of this carriage with nine passengers. This certainly shows a great saving in draft. We have used quite a number of sets of your axles and have yet to receive our first complaint regarding them.

We think you have the right principle, and that that principle is made a success by the pains-taking care which you exercise in fitting up the boxes and rollers. We expect to largely increase our use of your axles.

Very truly,
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Per
B E Jackson
MANAGER.

The Buckeye Buggy Co.,

COLUMBUS, OHIO,

Is one of the carriage builders who have adopted : : : : : : :

Timken Roller Bearing Axles

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BALTIMORE: Leonhardt Wagon Mfg. Co., 412-420 East Saratoga Street.
PROVIDENCE, R. I.: 128-130 Washington Street.
WASHINGTON, D. C.: The Andrew J. Joyce Carriage Co., Cor. 14th and E Streets, N. W.
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Stock of Axles carried at New York.

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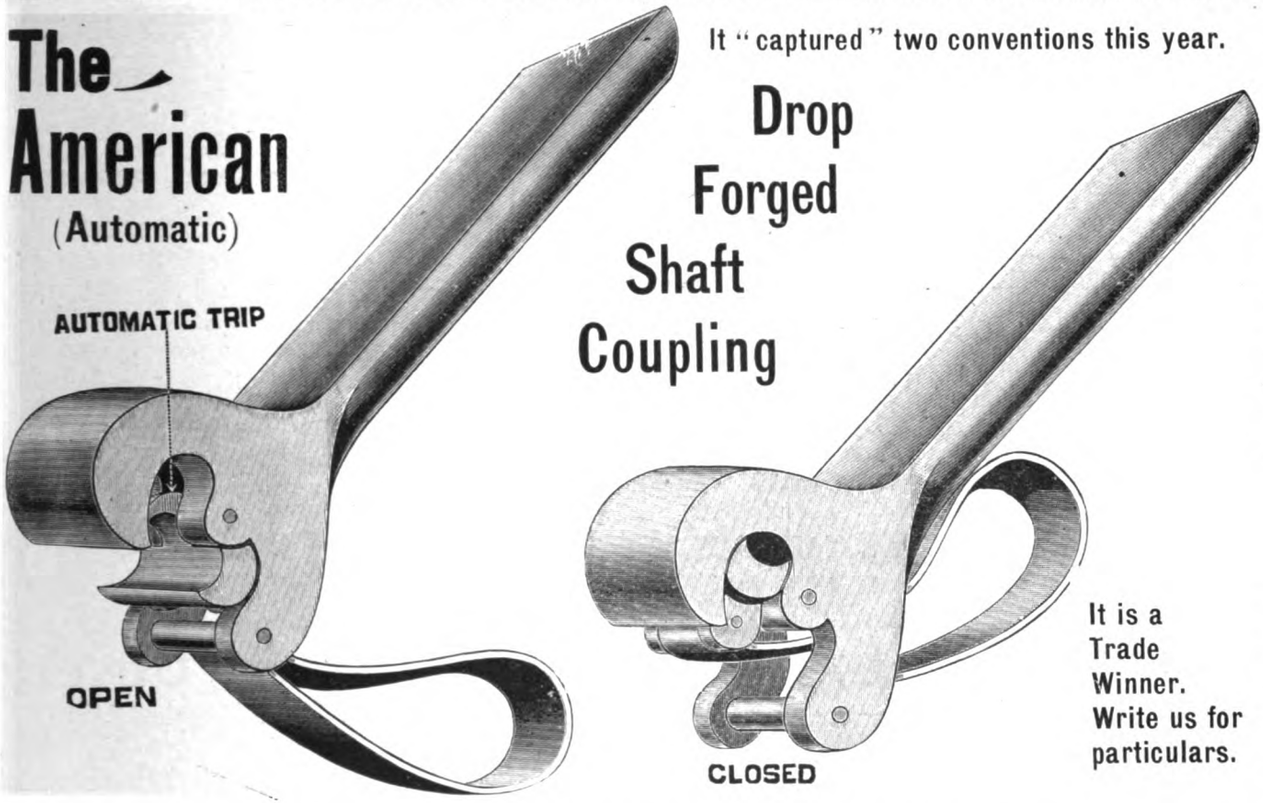
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The American (Automatic)

It "captured" two conventions this year.

Drop Forged Shaft Coupling

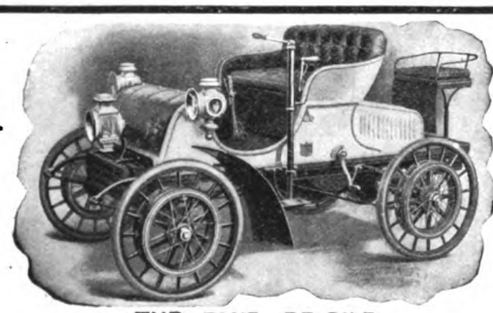


It is a Trade Winner. Write us for particulars.

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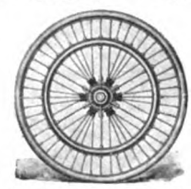
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SPEEDY



THE BLUE RE-SILE
RE—(BACK)—SILIRE (TO SPRING)

POSITIVE PNEUMATIC EFFICIENCY

THE WHEEL WITHIN WHEEL



MECHANICALLY PERFECT

All interested in Automobile development should critically examine the construction and mechanical perfection, illustrated by the elegant wheels installed upon the Blue Re-Sile, to be exhibited in spaces 81 and 82, Right of 4th Ave. Entrance, Madison Sq. Garden, Nov. 2d to 9th, 1901,

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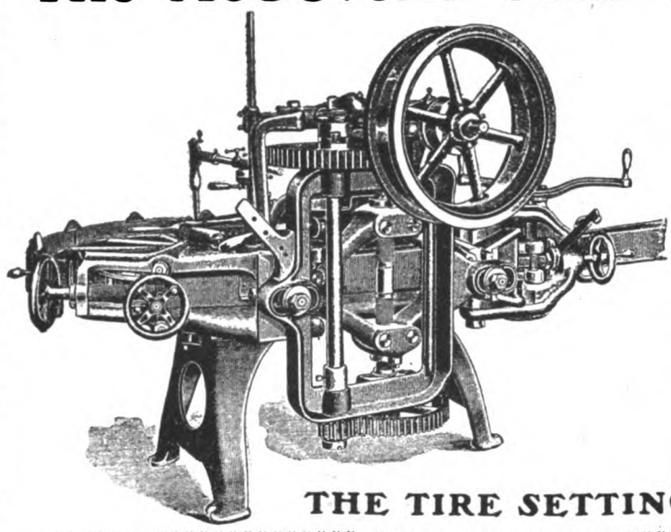
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PARK ROW BUILDING, N. Y.

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U. S. PATENT 672,908
OTHERS ALLOWED AND PENDING
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HAND AND POWER MACHINES

To Supply the Demands of the

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A power machine with an automatic attachment, and where the operator has absolute control of the machine; can stop or start it instantly at any point in its operation.

Simple in construction. Powerful in operation. Reasonable in price. Does its work thoroughly, accurately and rapidly, giving proper and uniform dish to wheels.

THE NEW MODEL McGOVERN COLD TIRE SETTING MACHINE

with its increased capacity, simplicity and strength, all three points being more than tripled in this new machine, we guarantee to set Tires ranging from ¾ inch to 2½ inch x ½ inch. Our daily capacity from 800 to 1,000 wheels.

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Most rapid working tool on the market for this class of work.

Capacity:

Any wheel up to 56 in. diam.
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Any hub up to 10 in. diam.

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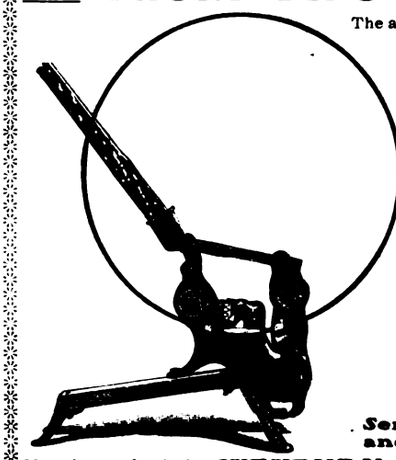
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The Ideal Tire Upsetter



The advantages of the ideal are:

The tire cannot kink.
One man can operate it.
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It will shrink light Buggy tire.
It will shrink Heavy Wagon tire.
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It will shrink perfectly all kinds and thicknesses of tire.
It is the easiest handled.
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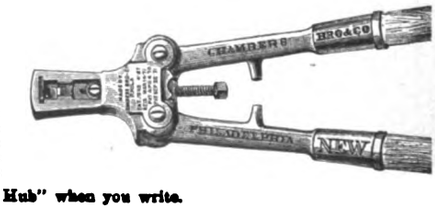
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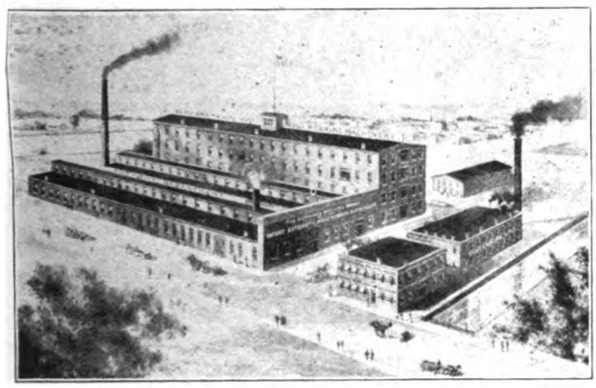
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A MODERN WHEEL PLANT

FOR MAKING

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The Highest Grade.

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COMPLETE OUTFITS OR SINGLE MACHINES.

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THE DEFIANCE MACHINE WORKS, DEFIANCE, OHIO.

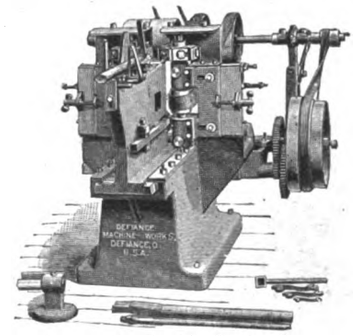
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Our Automatic Double Spoke Facer

CUTS WITH THE GRAIN. DOES SMOOTH WORK.
DOES NOT DESTROY THE CORNERS.

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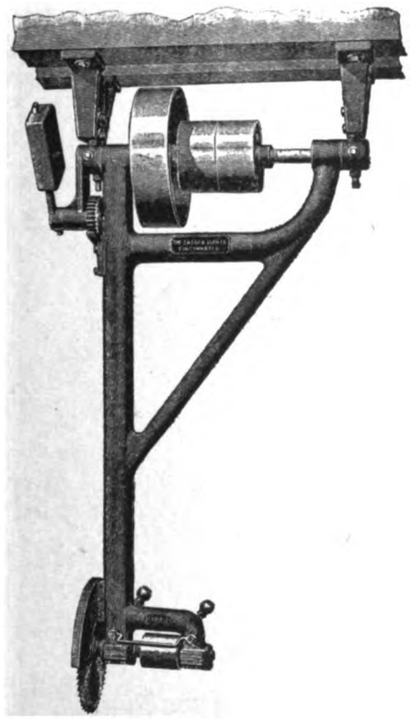
CAN BE QUICKLY ADJUSTED. HAS THREE CHANGES OF FEED.



Automatic Double Spoke Facer.

Manufacturers of

Wood Working Machinery



Adapted especially for

Carriage, Wagon, Spoke, Wheel and Handle Manufacturers

New No. 53 Swing Saw.

Among the many features on this machine which make it superior in range of work and workmanship to any of its class now on the market are the following:

1.—The patent adjustable balance-weight, the way it is attached and manner of operation, gives the machine great advantage for doing rapid work, as it helps the operator both ways, and when the cut is finished swings the saw clear off the lumber without any effort on his part.

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3.—The steel mandrel is fitted with an expansion device, to fit blades with different sized holes; the patent shield on the saw prevents all possible accidents. The frame of the machine being broad at the base insures great accuracy.

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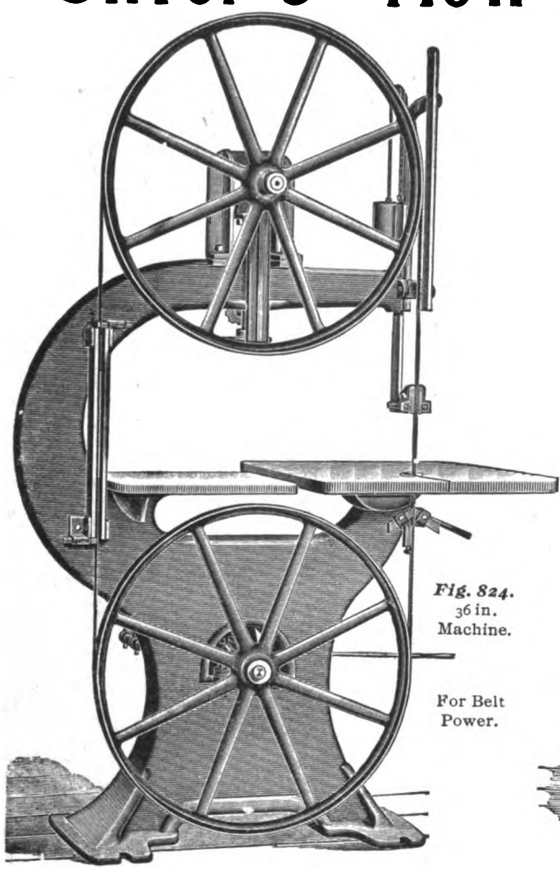


Fig. 824. 36 in. Machine. For Belt Power.

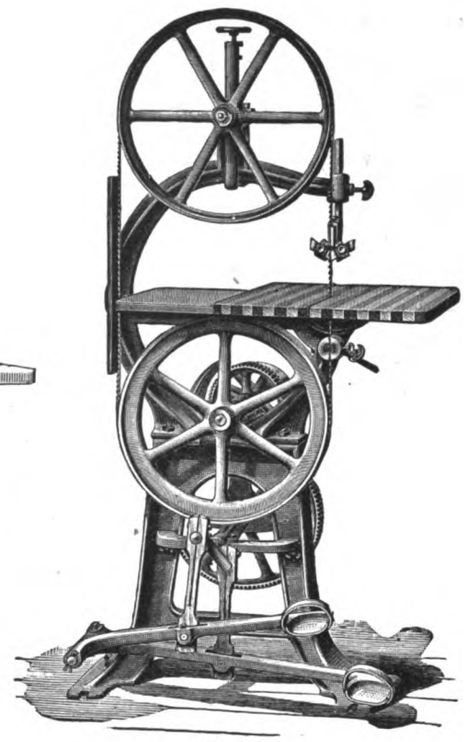


Fig 721. 20 in. Machine. Combined Foot or Belt Power.

IN SIZES:

20 in. machine for foot or belt power.
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LIST PRICES,

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Special Discount to Carriage and Wagon Makers.

These machines are symmetrical and modern in design, and absolutely rigid and strong for the heaviest work coming within the range of each machine.

Ask for 1899 12 page Circular showing all sizes.

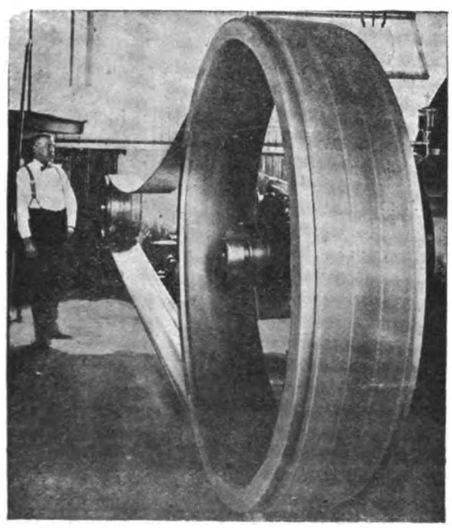
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EVERY MACHINE GUARANTEED.

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CLING-SURFACE

Will permanently prevent the belts in your plant from slipping and allow them to run easy.

Your machines will be able to do more work.

You save much time now spent in taking up belts.

And Cling-Surface makes and keeps the belts pliable, elastic and in perfect condition. They are not sticky.

Order on trial to be paid for only if it proves satisfactory.

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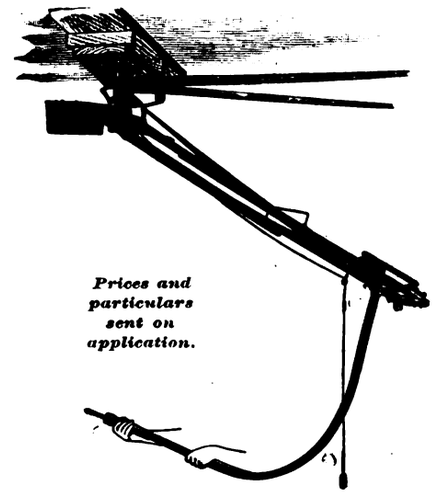
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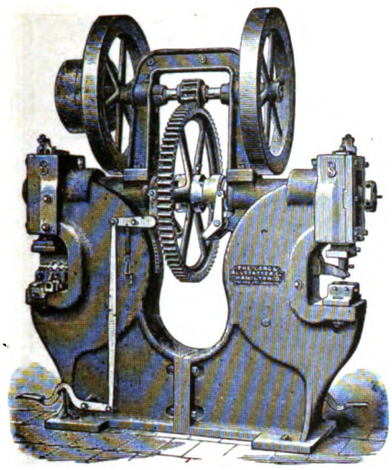
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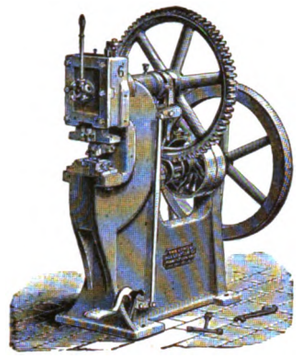
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Carriage Shops
Wagon Works, Etc., Etc.

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THE LONG & ALLSTATTER CO.

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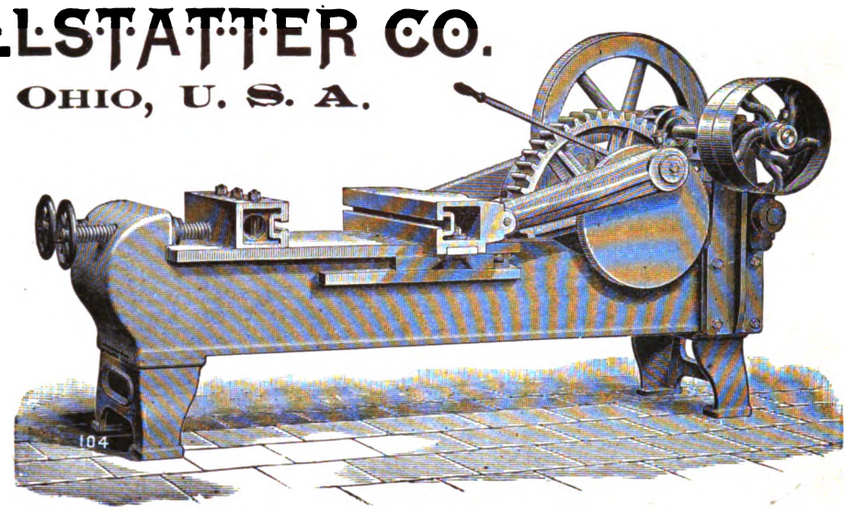
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MILLED SHACKLE BOLTS, CLOTH AND METAL BUTTONS,

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LARGEST VARIETY OF LAMPS FOR

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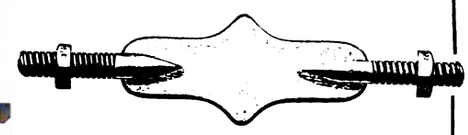
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CARRIAGE HARDWARE.



Spring Clip for Bailey Loop.

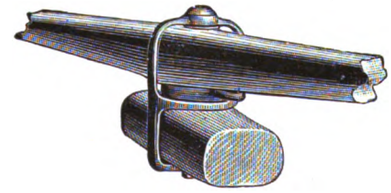


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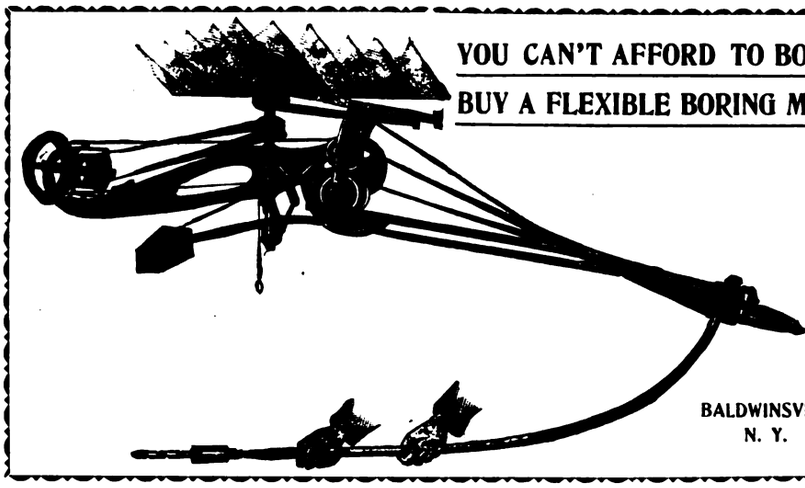
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Most complete and serviceable clip in the market. Gets full strength of cross bar.

Will never allow singletree to tip forward. Will outlast best work produced. Can be applied to carriages, carts and spring wagons. WRITE FOR PRICES.

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YOU CAN'T AFFORD TO BORE HOLES BY HAND WHEN YOU CAN BUY A FLEXIBLE BORING MACHINE AS CHEAP AS WE SELL THEM

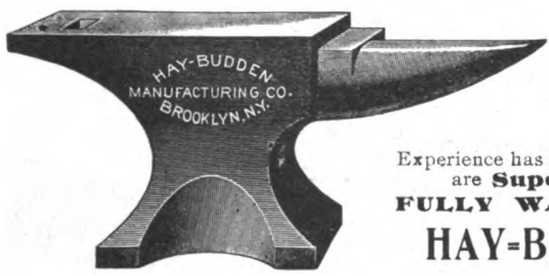
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....FIRST MADE IN AMERICA....

"HAY-BUDDEN," SOLID WROUGHT ANVILS.



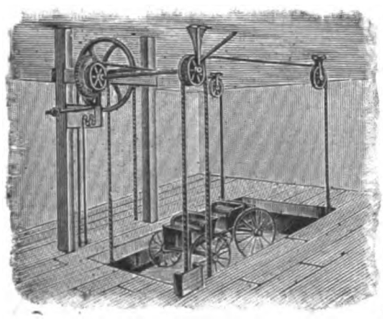
MADE OF *Best AMERICAN Wrought Iron.*
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FORGED BY *Best AMERICAN Workmen.*

Experience has proven their worth and demonstrated that the **Hay-Budden Anvils** are **Superior** in **Quality, Form** and **Finish** to any on the market.

FULLY WARRANTED. *SEND FOR DESCRIPTIVE CIRCULAR.*

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of every description. Send for Circulars.

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THE leading manufacturers advertise in THE HUB.

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Successors to Port Chester Bolt & Nut Co.

"EMPIRE" and other celebrated brands of TIRE BOLTS.

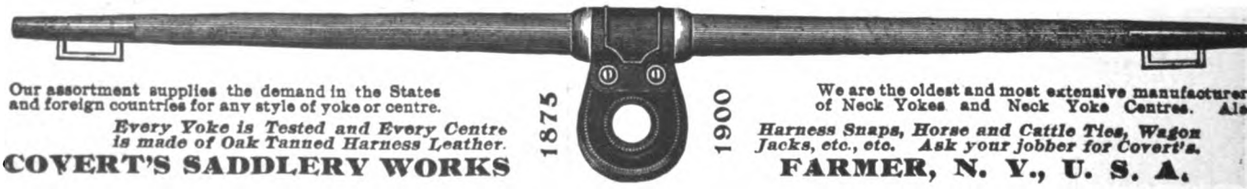
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Nuts and Bolts are perfectly interchangeable.





Our assortment supplies the demand in the States and foreign countries for any style of yoke or centre.

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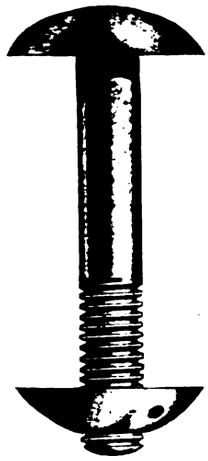
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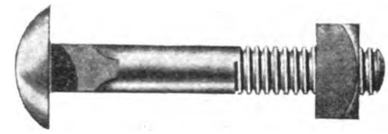
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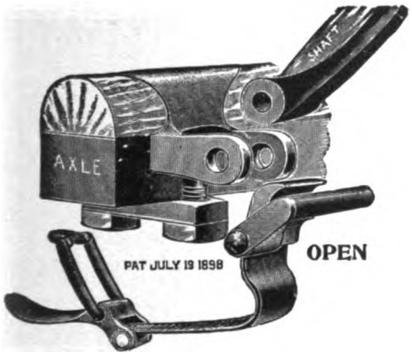
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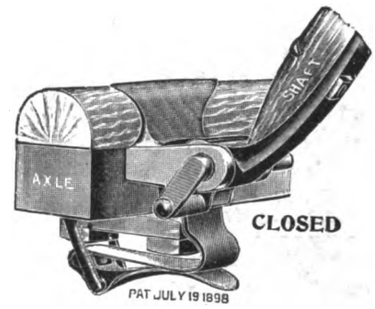
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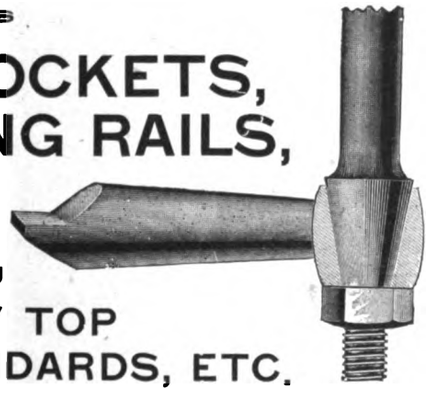


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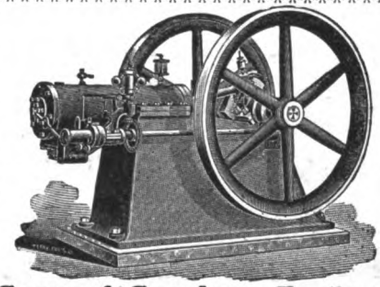


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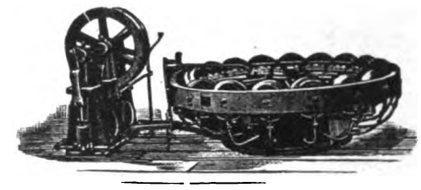
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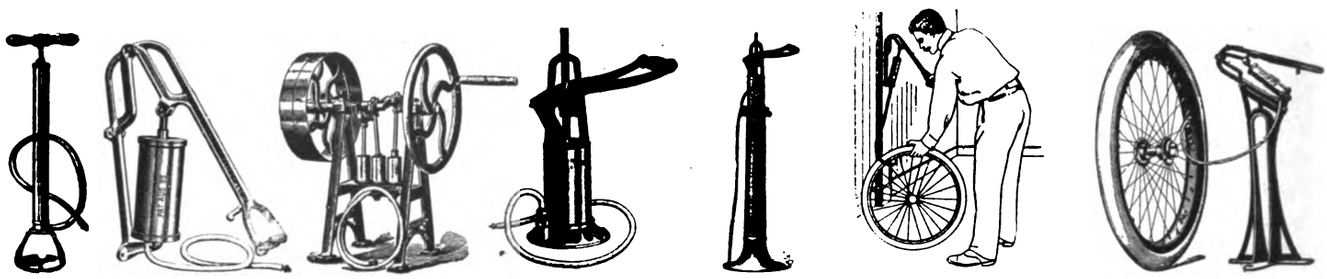
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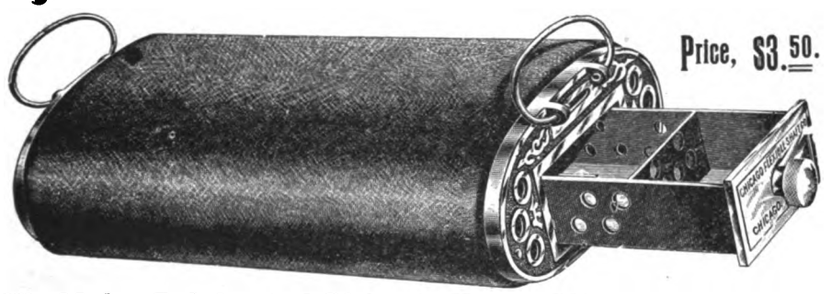


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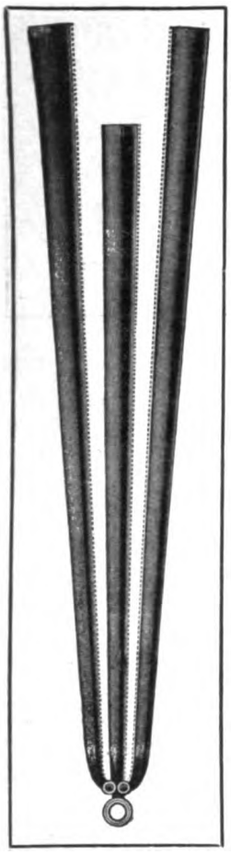
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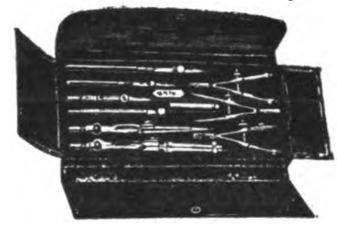
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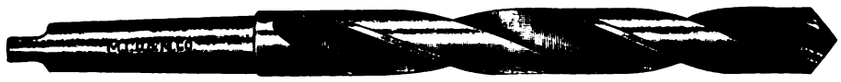
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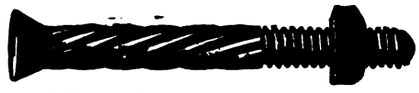
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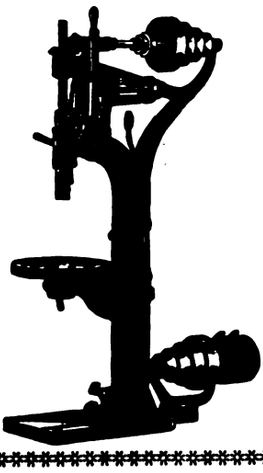
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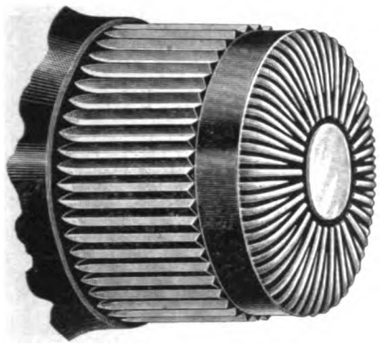
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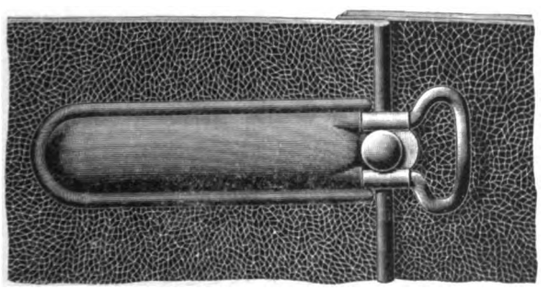
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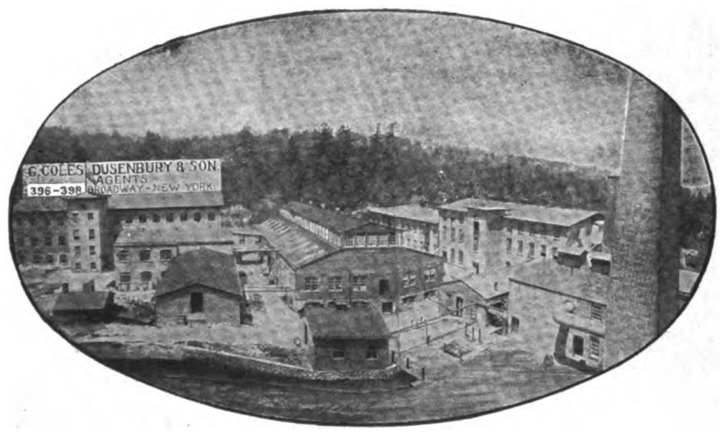


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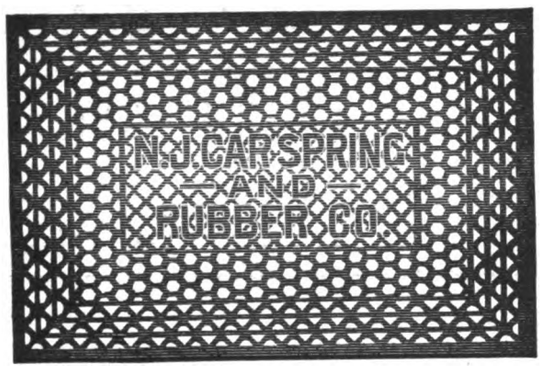
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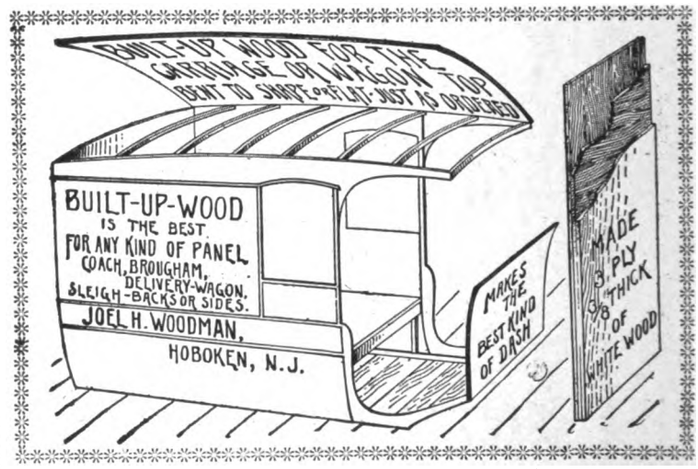


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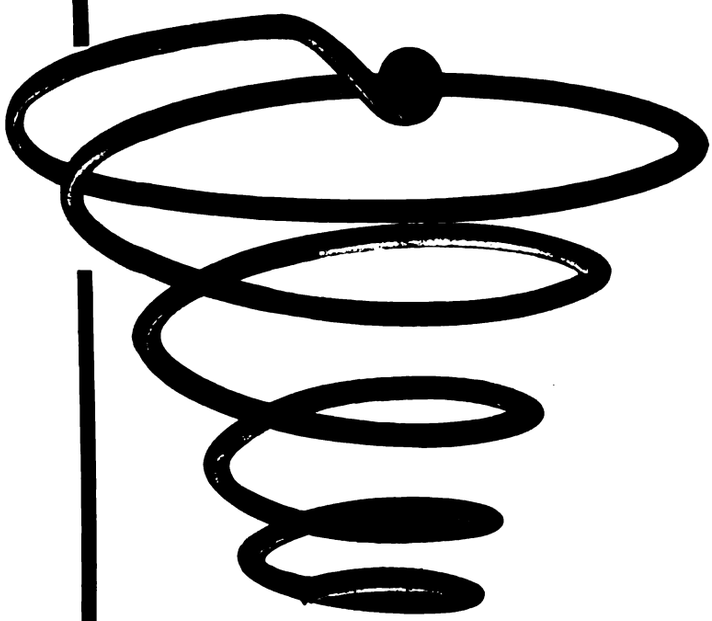
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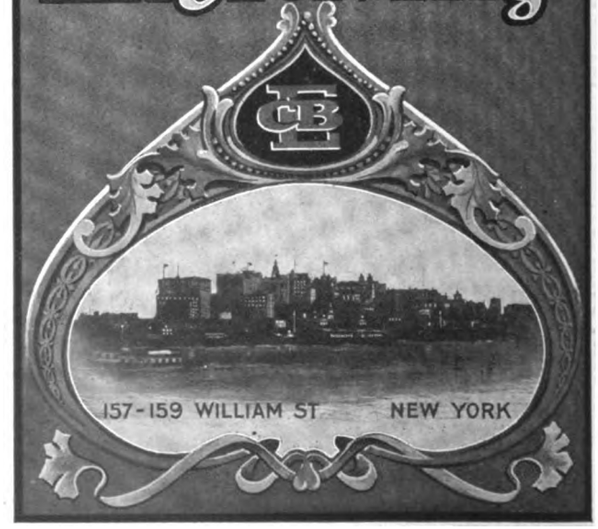
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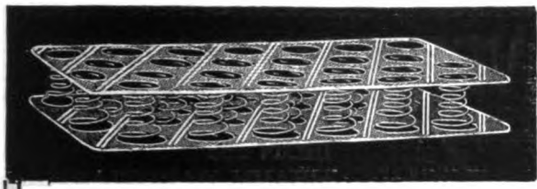
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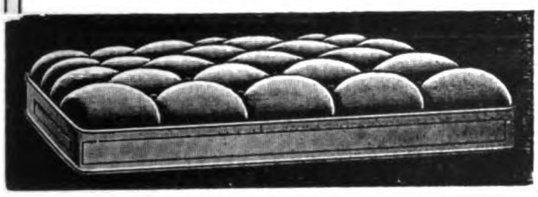
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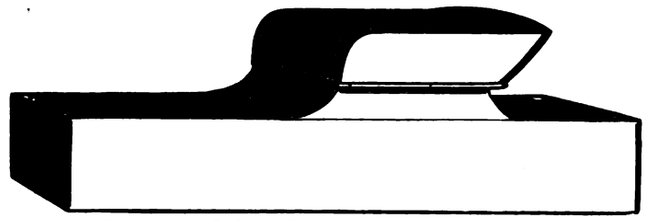
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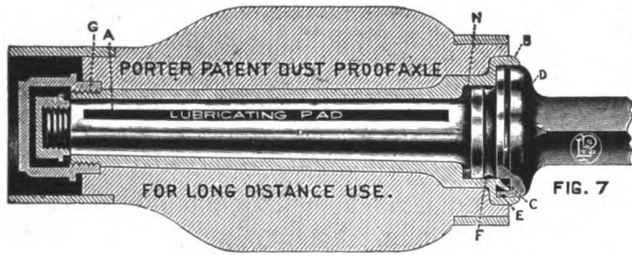


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